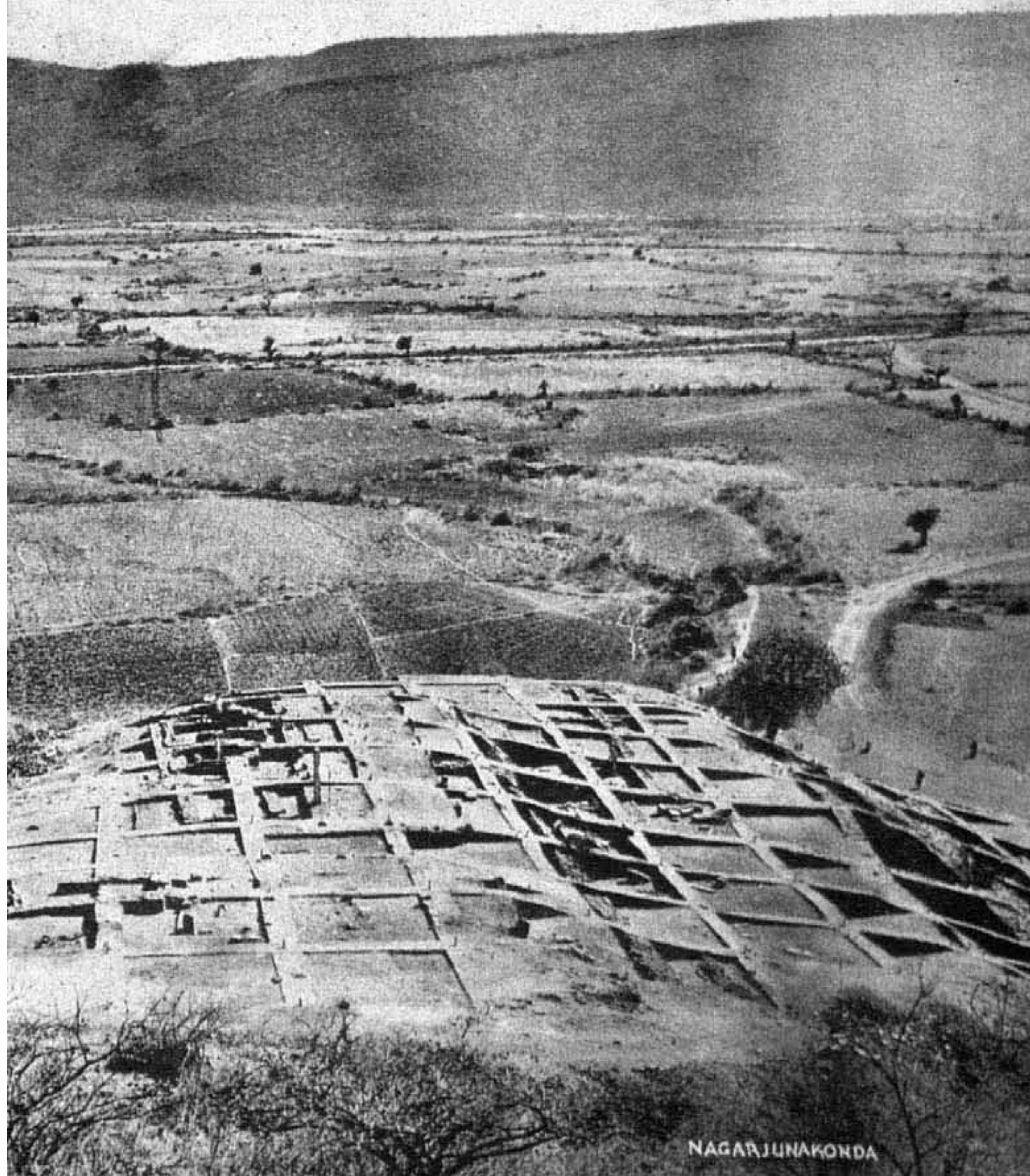
Indian Archaeology 1954-55

A REVIEW



INDIAN ARCHAEOLOGY 1954-55

—A REVIEW

EDITED BY

A. GHOSH

Director General of Archaeology in India



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PREFACE

The first number of this annual *Review* was published last year, when the circumstances leading to its genesis were fully explained. While it may be recalled that it was primarily intended to be a report for the tenth meeting of the Central Advisory Board of Archaeology, it also fulfilled its wider function of acquainting the interested public with the progress of archaeology in the country. The present number covers practically the same field and follows the same arrangement as its predecessor.

My thanks are due to my colleagues in the Circles and Branches constituting the Department for their reports, which have supplied material for the major portion of this *Review*, and to those at Headquarters for their help in its preparation and printing. I am also grateful to the Archaeological Officers of the States of Hyderabad, Madhya Bharat, Mysore, Rajasthan, Saurashtra and Travancore-Cochin for the material supplied by them, which have been utilized as necessary. Dr. H. D. Somalia, Shri K. G. Goswami, Dr. Moreshwar G. Dikshit, Shri G. R. Sharma and Shri Vijayakanta Mishra have immensely obliged me by supplying reports and illustrations relating to the valuable excavations carried out by them.

NEW. DELHI — A. GHOSH

The 1st August 1955

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—A REVIEW

I. GENERAL

As many as twenty excavations, thirteen of them by the Union Department of Archaeology, one by a State Department arid the remaining six by universities and learned institutions, were undertaken in different parts of the country during the year under review. Not all of them were conducted on large scales; nevertheless, the number itself is sufficiently encouraging.

Most of the excavations were rich in results, and some were of far-reaching significance. The last lingering doubts as to whether the Harappa culture had really extended as far south as the interior of the Kathiawad peninsula were dispelled by the discovery of five Indus seals, together with an assemblage of other typical Harappan objects, at the mound of Lothal at Saragwala in District Ahmedabad. A renewed excavation at Rangpur, another Harappa site, 30 miles to the south-west of Lothal, definitely established the co-occurrence of the buff ware and red ware, a fact fully confirmed at Lothal. Furthermore, the existence of a later culture at Rangpur, into which the Harappa merges, opens up new possibilities for a restudy of the problems relating to the disappearance of the Harappan folk.

The second Harappa cemetery, the first being at the type-site itself, was excavated at Rupar, while a late phase of that culture was identified at the neighbouring site at Bara. Further work at similar sites will be helpful in clarifying the differentiae of this phase.

Next to nothing was known about the protohistoric and early historical archaeology of central India and the northern Deccan only five years back. Persistent fieldwork has now brought to light a distinct sequence of cultures in this region from a chalcolithic age, separated from the palaeolithic by an undefined length of time, down to the period when the Northern Black Polished Ware came into vogue. This year's work at Nevasa, on the Pravara, a tributary of the Godavari, and at Prakash, on the Tapti, added to our knowledge of this far-flung chalcolithic culture, chiefly characterized by microliths and a painted red pottery and sometimes by neolithic artefacts. The accumulated material is now sufficient for an intensive study of the regional variations of this culture.

Previous excavations at Maheswar and Rangpur had shown that a black-and-red pottery, technically allied to the 'megalithic' pottery of south India (though the genetic relationship between the two and their typological similarities remain unestablished)

formed an important link between the protohistoric and historical periods in western and central India. This year, Ahar, near Udaipur in Rajasthan, where this ware occurs in abundance, was systematically excavated and a chronological variation in the ware noticed. The zone of the ware is not far removed from the fringes of the horizon of the Painted Grey Ware, and the location of a site containing both will go a long way in interlocking the early cultures of northern, western and central India.

The excavation of the Buddhist establishment of Ghoshitarama at Kausambi was completed, and the remains of the adjacent eastern gateway of the city were exposed. The elaborate plan of the latter added to the existing data on ancient Indian fortifications. Significant facts about the nature, extent and destruction of the Mauryan palace at Patali-putra were brought to light by the current work at Kumrahar. The excavation at Tam-luk in West Bengal, where the earliest occupation was found to be neolithic in character and which was seen to have imported or produced the rouletted ware during the period of Indo-Roman contacts-, is, it is hoped, the beginning of a planned campaign of systematic work in east India.

A cemetery with urn-burials, without any stone circles or covering slabs but still affiliated to the full-fledged megaliths by the presence of the Black-and-red Ware, was excavated at Amirthamangalam in the lateritic zone of Chingleput District. Whether the comparative simplicity of the burials represented here has any chronological relevance in the sequence of south Indian burial-monuments remains to be seen.

Following the decision of undertaking an intensive and extensive programme of excavation of the famous Buddhist remains in the Nagarjunakonda valley, prior to its submergence under deep water as a result of an elaborate irrigation-project, excavation, commenced here on a large scale at different spots, laid bare a few monasteries, *stupas* and temples, one of which was a hill-edifice dedicated to Hariti. Another Buddhist establishment was exposed at Sirpur in Madhya Pradesh along with a large number of sculptures and other objects, including bronzes and an inscription of the eighth century ruler Balarjuna.

In the field of epigraphy the outstanding discovery of the year was a version of the Minor Rock-edict of Asoka, who is here mentioned by name, at Gujarra in Vindhya Pradesh. Among the other new records mention may be made of: a Kushan inscription from near Mathura, which narrows down the gulf between the hitherto-known dates of Huvishka and Vasudeva to four years only; an inscription from Orissa which proclaims the Sailod-bhava Madhavavarman II as the performer of *asvamedha;* an Ajivaka inscription from Kanchipuram, most probably belonging to the reign of the Pallava Narasimhavarman II; an inscription from Indragarh, Madhya Bharat, introducing a Rashtrakuta ruler Nannapa, in whose times a Pasupata teacher built a Siva temple; an inscription from Tanjore District, recording the deaths of two generals of the Chola Rajendra II in a battle; three records of the reign of the Yadava Singhana, all from Anantapur District, referring to a

guild of agriculturists; a *prasasti* from the Kamakshi temple at Kanchipuram, which describes the relationship subsisting between the Hoysala king Ballala III and the southern powers; and a number of Persian inscriptions from Kathiawad, important for the medieval history of Gujarat and for the study of the contemporary social conditions.

A vast number of monuments were, as usual, attended to this year. Out of them special mention may be made of the following. An intensive programme of repairs, including the improvement of the precincts, to the tomb of Abdur Rahim Khan-i-Khanan at New Delhi was framed and is now being executed. The intrados of the upper dome of the Taj Mahal was replastered to effect the periodical extraction of salt from the thick shell of brickwork, of which the dome is constituted. The work of providing internal tie-rods to hold together the outer and inner walls of the Dargah of Sheikh Salim Chishti at Fateh-pur Sikri proceeded according to plan.

The temple-group at Khajuraho continued to receive attention, and steps are being taken to dress and turf the compounds of the temples to remove their barren look.

The problem of rendering safe the surviving *minor* of the Dharara Mosque at Bana-ras received urgent attention, and a committee of experts was formed to advise on its preservation.

Extensive work continued in the Sun temple at Konarak to implement the recommen-dations of the Konarak Temple Committee. Repairs to the earthquake-damages at the Sibdol temple at Sibsagar, Assam, are in progress: this year the facade was largely re-veneered with property bonded stones of size, and the golden pinnacle was reset in its original position on the top of the 120-ft. high *sikhara.*

Of the monuments in Hyderabad State the maintenance of which has now devolved on the Union Department of Archaeology, the caves at Ajanta, Ellora, Pitalkhora and Aurangabad, the temple at Hanamkonda, the forts at Golconda and Warangal and Bibi-ka-Maqbara at Aurangabad were attended to with great care. So were the monuments in Mysore, e.g., the temples at Halebid, Mosale, Belavadi and Sringeri and Tipu Sultan's palace at Bangalore.

The reinforcement of the groyne-wall at the Shore temple at Mahabalipuram was completed this year. The removal of later accretions in the compound of the Brihadisvara temple at Gangaikondacholapuram has given an altered appearance to its precincts.

Special attention was bestowed on some of the rock-cut caves in Bombay State. The gunite-layer on the roof of the main cave at Elephanta, no longer fulfilling its function, was removed for a careful observation of the sources of water-percolation before its renewal.

The programme of putting in order the monuments in the long-neglected Chitor fort in Rajasthan was further carried out, work being for the present restricted to the Jaina temple Sringar Chauri, Banbir's wall, Rana Kumbha's palace and Mira Bai's temple. The consolidation of the masonry in these monuments is infusing new life into them, and

the extensive clearance of masses of debris is not only imparting to them a fresh look but is bringing out unsuspected features in their construction.

The monuments at Mandu in Madhya Bharat received attention as before. A fallen bastion in the fort at Raisen, Bhopal, was rebuilt with old material.

The work of the application of chemical methods for the amelioration of the natural decay of monuments and for the preservation of mural paintings has enormously increased of late. This year the Lingaraja temple at Bhuvaneswar, the sculptures at Khajuraho, the Main Stupa at Sanchi and the sculptures and inscriptions in the Karla and Bhaja caves were among the monuments which were chemically cleaned and preserved. The painted surfaces at a large number of monuments, including the caves at Ajanta, Ellora, Bagh, Badami and Sittannavasal, and medieval and late monuments, as at Fatehpur Sikri, Sikandara and Baroda, were treated. The Chemical Branch also undertook researches in different directions, including soil-analysis and geochronology.

The Department of Archaeology has had till now practically no contacts outside the limits of India, which is no doubt as surprising as it is regrettable, when the ancient relations of India with her neighbouring countries, all of them deeply permeated by her cultural forces, are recalled. This year's exhibition of Buddhist art and antiquities at Rangoon, organized by the Department with objects from its own collections and from other museums, must, therefore, be regarded as a unique event in its annals.

2. EXCAVATIONS[1]

NEVASA, DISTRICT AHMEDNAGAR.[2]—The excavation conducted by Dr. H. D. San-kalia and Shri S. B. Deo of the Deccan College Post-graduate and Research Institute under the auspices of the University of Poona at the 70-ft. high mound, locally known as 'Lad-Mod' on the south bank of the Pravara river, was wrought with important and far-reaching results, inasmuch as it provided for the first time a fairly complete sequence of cultures (fig. 2), viz., the palaeolithic in two stages, neolithic-chalcolithic, early historical, Roman-Satavahana and early Muslim (Bahmani).

The earliest occupation was represented in the three layers of gravel, which contained two types of lithic industries. One, probably the earlier, was a handaxe-industry on trap rock. It was typologically Acheulian (pl. I). The second industry consisted of comparatively small cores, flakes, scrapers, blades and burins of jasper, carnelian and other fine-grained stones (pls. II and III). Of the five fossil-bone specimens, one found *in situ* in the hard cemented gravel (the first bed from the bottom) was, according to the Geological Survey of India, a fragmentary left mandible of *Bos namadicus* with M2, P4 and P3. It is interesting to note that *Bos namadicus* had previously been reported from the Narmada gravels of the Middle Pleistocene. It is thus most probable that the larger palaeoliths from the basal beds would be equally old, whereas the smaller tools from the middle and upper gravels, of an altogether different technique, would belong to the Upper Pleistocene.

Overlying these gravel-beds was a sterile layer of sandy silt, about 20 ft. thick, which seemed to be the last phase of the aggradation of the river. Immediately above this layer was the black soil, the cradle of the chalcolithic culture. From this black soil upwards the occupation-debris was nearly 30 ft. thick, falling into five distinct cultural phases.

The first phase was characterized by the presence of polished pointed-butt axes of trap rock with lenticular section (pl. IV A) and microliths of chalcedony made by the special method called 'the crested ridge and ripple-marked core technique'. The latter included flakes, ripple-marked cores, crested-ridge flakes, serrated two-and one-edged knives, parallel-sided blades, triangles, trapezes, crescents and scrapers. Besides, polished stone axes of trap, round sling-stones of quartz and hammer-stones of trap and quartz were also found. The use of metal was attested to by the discovery of a copper or bronze bead, a hook and a chisel.

Excepting huge storage-jars and burial-urns, pottery was painted usually in black on a fine red or dark chocolate surface. It was generally wheel-made, of thin section, well-fired and with a red slip on both the sides. The most common shapes were bowls with

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[1] See fig. I

[2] Information from Dr. H. D. Sankalia.

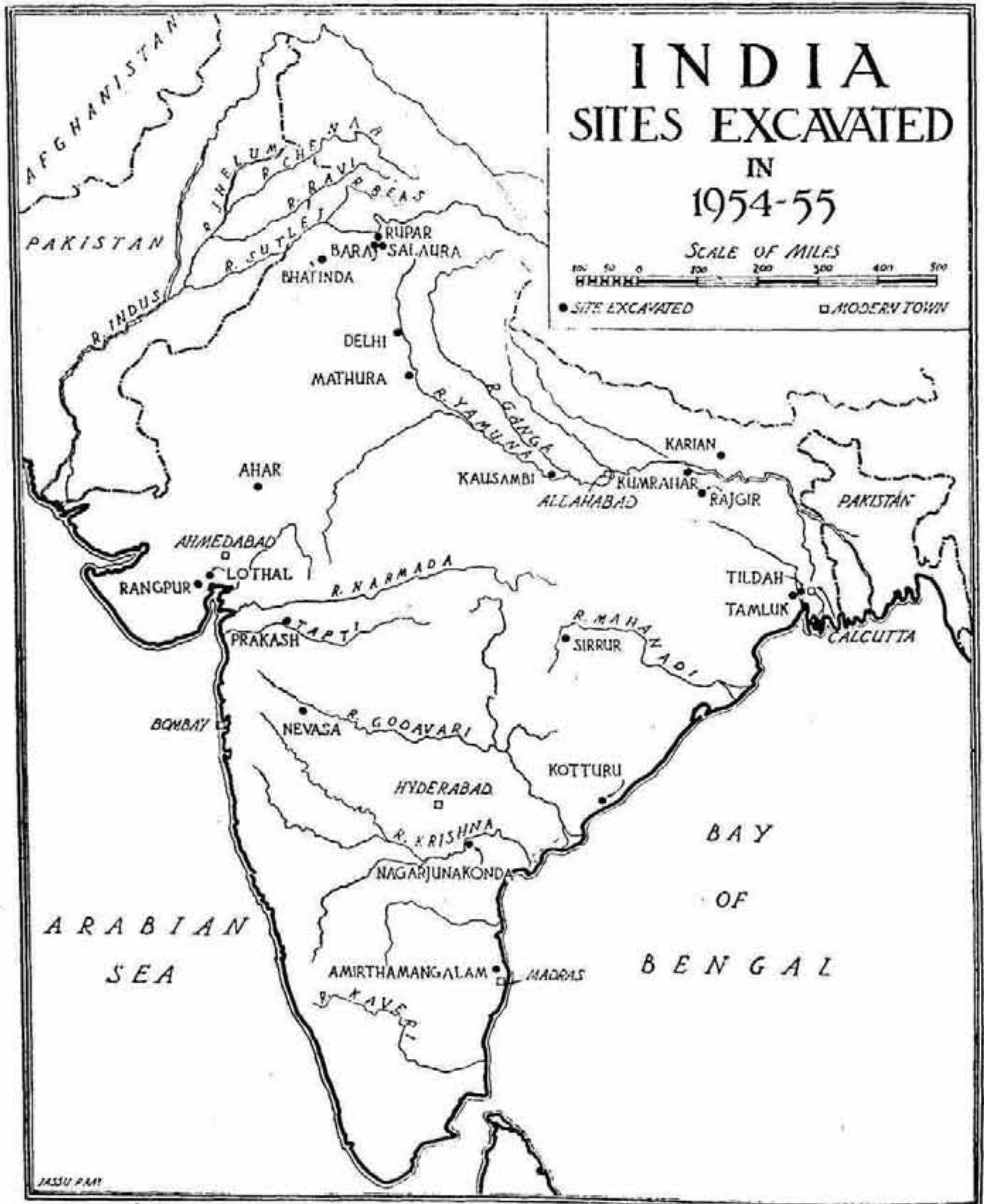

INDIA
SITES EXCAVATED
IN
1954-55
SCALE OF MILES
100 50 0 100 200 300 400 500
SITE EXCAVATED
MODERN TOWN
AFGHANISTAN
PAKISTAN
R. JHELUM
R. CHENAB
R. RAVI
R. BEAS
R. SUTLEJ
R. INDUS
RUPAR
BARA
SALAURA
BHATINDA
DELHI
MATHURA
R. YAMUNA
R. GANGA
KARIAN
AHAR
KAUSAMBI
KUMRAHAR
RAJGIR
ALLAHABAD
PAKISTAN
AHMEDABAD
LOTHAL
RANGPUR
R. NARMADA
TILDAH
TAMLUK
CALCUTTA
R. MAHANADI
SIRRUR
PRAKASH
R. TAPTI
BOMBAY
NEVASA
R. GODAVARI
KOTTURU
HYDERABAD
R. KRISHNA
BAY
NAGARJUNAKONDA
OF
ARABIAN
SEA
AMIRTHAMANGALAM
MADRAS
BENGAL
R. KAVERI
JASSU RAM

FIG. 1

concave rim and rounded base and spouted vessels with flaring rim, angular shoulder, rounded base and long side-spout or drinking tube painted along its length or at its edge. With the single exception of a sherd preserving the painted hind part of a dog-like animal (pl. V A), the designs on the pots were essentially geometric and were extremely limited in variety, consisting of hatched squares, triangles, rhomboids, intersecting circles and angular or oblique lines. A few beads of carnelian, chalcedony, bloodstone, faience and steatite, the last of the tubular and segmented type, gave some idea of the ornaments of the period.

The authors of this chalcolithic culture lived in huts with square or rectangular plans as suggested by the alignment of post-holes with a flooring of either gravel mixed with lime or burnt black soil and lime. Their burial was of the fractional type (pls. IV B and V B). After partial cremation or exposure of the body, the bones were placed in a hand-made urn, which was covered by another urn and then laid in a north-south direction. The culture has been dated to about I000 B.C. on the basis of its affinity with the Stone Axe Culture of Brahmagiri in Mysore on the one hand and the microlithic blade-industry of Navda Toli in Central India on the other.

After this the site was deserted for a time, the break being indicated by the lime and hemp flooring of the next phase sealing off the earlier debris. This second phase ushered in the early historical period. Houses were made as before with uncut timber, though bricks now came into use for flooring, walls and wells and tiles for roofs. The general use of iron was suggested by the occurrence of sickles, axes, plough-shares and leaf-shaped daggers or spear-heads. The common pottery was of ordinary red ware, while the specialized industry was the black-and-red ware. Of the Northern Black Polished Ware only one sherd was found. The beads were of various shapes and materials including clay, glass, paste, faience, steatite and semi-precious stones. The occurrence of wheat and pulses shows the earliest use of these grains in the Deccan. Numerous coins of potin, lead and copper of the Satavahana rulers help to date this phase to a period between the third century B.C. and the first century A.D.

The third phase was only a continuation of the second one, as it was not altogether different from the latter. Its most important feature was the gradual disappearance of the black-and-red ware and the emergence of the fine Red Polished Ware with sherds of the imported Mediterranean amphora. The occurrence of the latter indicated trade with the Roman world, the effect thereof being reflected in the construction of houses, which were now built on an extremely well-laid foundation. In the Red Polished Ware a few sherds appeared to be definitely Samian in character. The Roman contact was also suggested by the presence of fine, translucent, light blue glass bangles, beads and an imitation (in lead) or original coin of Tiberius. The other features of the preceding phase, including Satavahana coins, continued in this phase as well. For distinguishing it from the preceding one this phase is called Indo-Roman or Roman-Satavahana.

The fourth phase, characterized by the presence of fine art-objects, viz., a small kaolin head of a boy, called the 'Smiling Boy of Nevasa' (pl. V C) and a minutely-carved terracotta Nandi, was a short-lived one. The manufacture of shell bangles was a flourishing cottage-industry in this period.

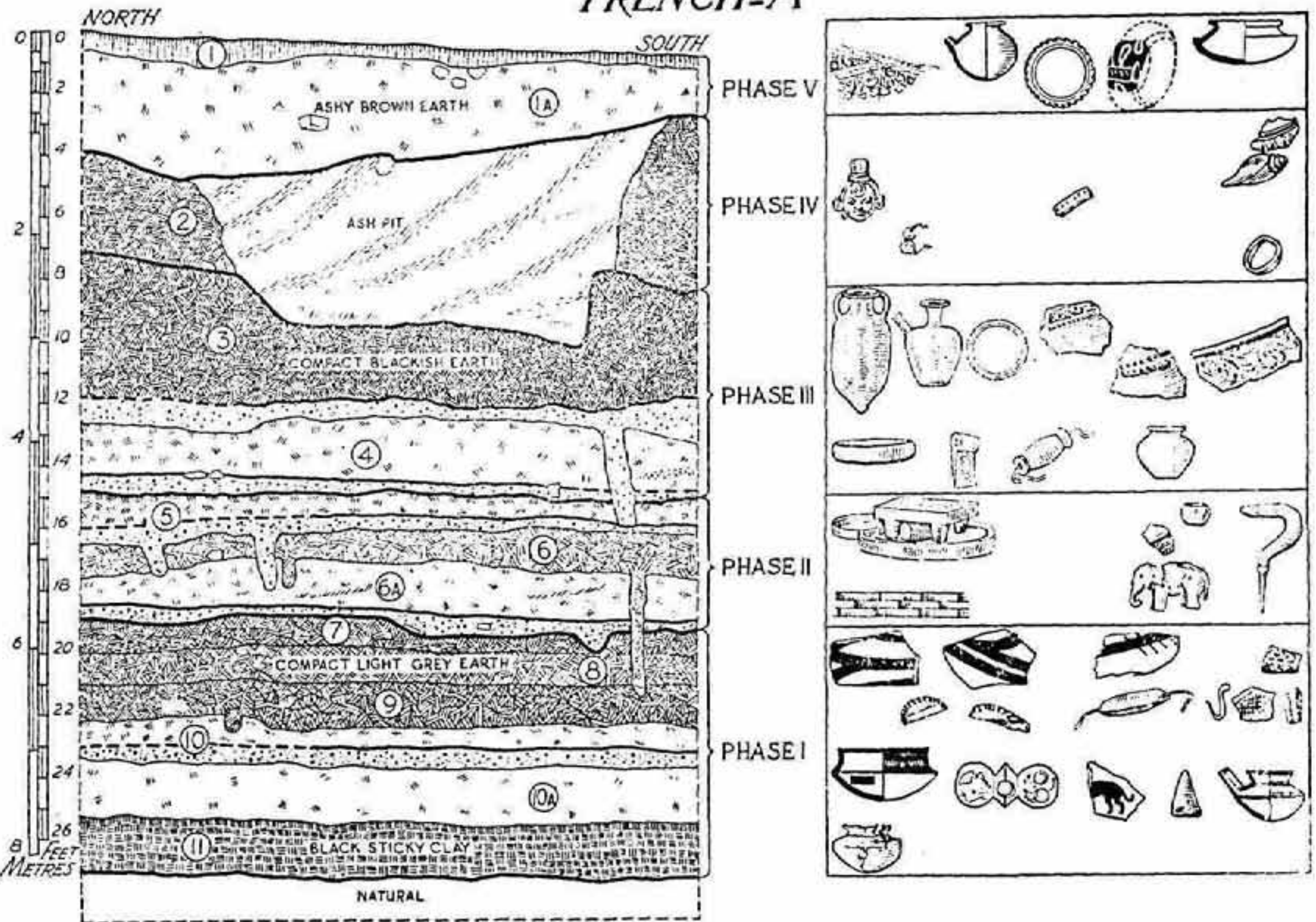

NEVASA, DISTRICT AHMEDNAGAR: 1954-55
TRENCH-A
NORTH
SOUTH
PHASE V
PHASE IV
PHASE III
PHASE II
PHASE I
ASHY BROWN EARTH
ASH PIT
COMPACT BLACKISH EARTH
COMPACT LIGHT GREY EARTH
BLACK STICKY CLAY
NATURAL
FEET
METRES

Fig. 2

The fifth phase, notable for the industry of fine polychrome glass bangles, is dated with the help of the coins of the Bahmani period.

RUPAR, DISTRICT AMBALA.—The Excavations Branch under Dr.Y.D. Sharma continued its operations at Rupar, concentrating mainly on the excavation of a part of the cemetery of the Harappa period, which had come to light in previous years. The cemetery, now a low mound, lies about I60 ft. to the west of the main habitation. The results were important, as previously all information regarding the burial-practice of the Harappans had almost solely been derived from cemetery R 37 at Harappa. The cemetery-area at Rupar had been considerably disturbed by the later occupants of the site, mainly by the users of the Painted Grey Ware. Most of the skeletons were so much knocked about that they were available only in parts (pl. VI), and some seemed to have been totally removed, not necessarily out of deliberate volition but merely in the course of digging pits for diverse needs. However, some of the burials were sufficiently intact to give an adequate idea of the method of burial.

The grave-pits, the earlier ones dug into the natural soil, varied in dimensions. On an average they measured 8 ft. by 3 ft. and were 2 ft. deep. The body was laid in the pit generally with the head towards the north-west. One of the excavated skeletons, however, lay north-south. While a few of the burials contained no funerary goods, most of them had an assemblage of pots at the head, feet and on the sides of the body. Normally, vessels were placed on the same level as the body, but one burial revealed a departure. Here the pots were arranged and then covered with earth. The body was placed last and the pit finally sealed. During the primary filling with earth, some of the pots got dislocated from their position and were thus found lying below the body (Pl. VII).

Among the exposed burials the number of pots varied from two to twenty-six (pl. VIII A). Personal ornaments found in the graves included bangles of faience and shell, a copper ring and some beads (pl. VIII B). Most of these ornaments were not found in their original position, but a faience bangle was still on the left wrist of the wearer (pl. VI), while another skeleton had a copper ring on the middle finger of the right hand. It may be recalled that at Harappa a copper ring was found on the right ring-finger of a skeleton. The beads were mostly found loose in the burials. The grave-pit was filled with the excavated earth flush with the ground-surface.

The wide brick wall of Period III {*circa* 600-200 B.C.) discovered last year was further pursued and turned out to be the retaining wall of a large tank fed by rain-water through a brick-built inlet (pl. IX).

BARA AND SALAURA, DISTRICT AMBALA.—The Excavations Branch also undertook limited excavations at the mounds at the villages of Bara and Salaura, adjacent to each other, about 5 miles south of Rupar. The object was to investigate if further evidence could be had to confirm the gap between the end of the Harappa culture and the arrival of the Painted Grey Ware people that was evident at Rupar. The excavations confirmed this gap by evidence of an indirect kind (fig. 3).

While at Bara the entire mound was found built up of the accumulations of late

SCHEMATIC SECTION
(ACROSS BARA & SALAURA MOUNDS)



FIG. 3

Harappa times, at Salaura, about 300 yards to its east, the earliest occupation started with the Painted Grey Ware. Above the Painted Grey Ware levels there were deposits of two different periods, the lower one datable approximately to Kushan times and the upper one to the medieval period. Bara was poor in structures, and Salaura revealed structures only in the medieval horizons.

The excavation at Bara, however, threw important light on the course that the Harappa culture had taken on the upper Sutlej. Apparently the arrival of the Harappans on the Sutlej was a continuous process; they came in wave after wave, the subsequent incomers bringing new ideas and ceramic traditions. At Rupar, two main phases were indicated in the deposits of the Harappa culture: the lower one represented a late phase of the mature Harappa culture, while the upper one offered certain new traditions in ceramics. For instance, while the typical Indus goblet with pointed bottom was already rare in the lower Harappa levels, in the upper levels it was almost absent. Terracotta cakes also became scarce in the upper deposits, where, however, certain characteristic incised designs on pottery, the source of which is still uncertain, began to appear. The entire accumulation at Bara, on the other hand, showed this late phase, and the accumulations being about 15 ft. thick it is reasonable to surmise that Bara was still occupied when Rupar had been deserted by the Harappans, for here the Indus goblet was represented only in lower levels, and that too by hardly half-a-dozen sherds. Terracotta cakes were equally rare. There was, however, a diversity in slips and paintings (pls. X and XI A), not to be met with in lower levels at Rupar. Some of the pottery-shapes were also new, and the practice of decorating pots by horizontal or wavy incised lines and other patterns was quite prominent, although this decoration seemed to be confined to large water-jars and cooking vessels (pl. XI B). This tradition has not been recorded at Harappa and Mohenio-daro but is abundantly represented at the Harappa sites in Bikaner.

RANGPUR, DISTRICT JHALAWAR.—AS a result of the excavation conducted at this place in 1953-54, definite evidence of Harappan affinity in the material equipment of the culture of its lower levels had been found. The occurrence.of buff ware along with red ware, however, needed further investigation. Excavation was, therefore, resumed this year by Shri S. R. Rao of the Western Circle.

Further evidence was available to show that Rangpur had been a Harappa settlement with a long life. A number of animal-motifs, such as bull, peacock (pl. XII A) and deer, were found painted on pottery. A mud-brick fortification-wall, 6 ft. 3 in. thick, was noticed in the earliest period. Further above, but still belonging to the same culture, were found drains and mud-brick structures in three different levels. With the discovery of Indus seals at Lothal, another Harappa settlement 30 miles north-east of Rangpur, where pottery identical with the Rangpur red and buff wares was found (below, p. I2), no doubt now lingers that Rangpur was a Harappa settlement. The excavation confirmed the earlier report that the buff ware was coeval with the red ware.

Another important contribution of this excavation was that it provided for the first time a continuous cultural sequence from the Harappa to the period prior to the Northern Black Polished Ware with hardly any break. Unlike Harappa and Mohenjo-daro, the Harappa culture here died a natural death; for it gradually deteriorated and transformed

itself into the subsequent culture, characterized by the use of a lustrous red pottery. The culture of this transition-period, while maintaining its individuality in its preference for vessels of smaller size with a shining red surface (pl. XII B), borrowed freely from the degraded Harappa culture the technique of paring pottery and continued to use certain Harappan ceramic types. Gradually the thick fabric gave place to a thin one and painting in light black over light red slip to deep black on pink and deep red.

As regards shapes, the typical Harappan types underwent a gradual change, and new ones came into vogue. The black-and-red ware painted in white or black, made familiar at Maheswar and Ahar (in levels earlier than those of the N. B. P. Ware at the former place), was noticed in the topmost level of this post-Harappa culture, of which crude microliths and terracotta animal-figurines were other features.

LOTHAL, DISTRICT AHMEDABAD.—The surface-finds in the form of pottery, chert blades, beads, terracotta cakes and bricks of Harappan size indicated the rich potentiality of the extensive mound (I900 ft. long, I000 ft. wide and 20 ft. high) known as Lothal in the village of Saragwala. In order to determine whether it was a full-fledged Harappa settlement, in which case it would further indicate the southern extension of the zone of the Harappa culture, the place was subjected to intensive excavation by the Western Circle under Shri S. R. Rao, as a result of which three phases of that culture came to light. The earliest phase, represented by a 4 to 5 ft. thick debris with fragments of red and buff ware pots, appeared to have been washed away by a flood. The second phase was marked by a clay rampart, 8 ft. high and more than 16 ft. thick. The last and most important phase was a settlement made over the rampart after the latter had been greatly damaged by floods. Like Rangpur the drains were built of burnt bricks, while the other structures were of mud-bricks (pl. XIII).

The discovery of steatite bangles, bowls and ear-rings, hundreds of beads (pl. XIV) of steatite, faience, agate, carnelian and gold, chert blades (pl. XV A), copper arrow-heads and weights exactly similar to those found at the Harappa sites and, above all, Indus seals and sealings (pl. XV B), bearing the characteristic script and motifs like unicorn and including terracotta pieces with seal-impressions, dismissed once for all the last shreds of doubt as to the southern extension of the Harappa culture. As at Rangpur, the pottery was usually of thick fabric, was either red or buff and included beakers, goblets, troughs, dishes-on-stand, knobbed vessels with flaring sides, lamps and perforated jars (pl. XVI). The painting, normally in light black over red and, in the case of buff wares, in chocolate, consisted mostly of linear designs (pl. XVII A).

A huge earthern jar covered by a stone with a course of bricks all round it was found to contain a few pieces of bone, a copper bangle and a copper arrow-head and might have been a burial (pl. XVII B).

The excavation at Lothal has established that the Harappa culture did not confine itself to north-west India but extended all over Saurashtra and as far south as the northern reaches of Bombay State (also below, p. 59). When completed, this excavation, supplemented by that at Rangpur, is likely to go a long way in filling the gap in west Indian archaeology by establishing a continuous sequence from the Harappa to the pre-Buddhist period and throw light on the circumstances leading to the end of the Harappa civilization.

EXCAVATIONS

PRAKASH, DISTRICT WEST KHANDESH.—With the aim of finding out the nature of the chaicolithic phase of western India and assigning to it a relative chronology based on a stratified sequence, excavation was undertaken by the South-western Circle under Shri B. K. Thapar at the 70-ft. high mound at Prakash at the confluence of the rivers Tapti and Gomai (pl. XVIII).

Excavation here exposed 55-ft. deep occupational strata (pl. XIX) belonging to four cultural periods. The earliest settlers (first millennium B.C.) used microliths (pl. XX A). The use of copper, though known, was extremely scarce. The principal ceramic industry of this people comprised a distinctive painted red ware with designs executed in black on red-slipped surface; the designs consisted mainly of hatched diamonds, horizontal or oblique bands, criss-cross and wavy lines, ladder-pattern and also animal-motifs (pl. XX B). In association with this industry was found a burnished grey ware of thinner fabric, occasionally having faint linear designs in white. Some of the sherds with thicker and coarser fabric in dull grey ware seemed to be treated with an ochre-paint mainly on the rim-portions. Beads of shell-paste and semi-precious stones were also obtained from this period.

Period II *(circa* fifth-first centuries B.C.), which began after a lapse of time, as indicated by a thin deposit of gravel at the site, represented a full-fledged iron-using culture characterized by the use of the well-defined black-and-red ware in association with iron objects. The occurrence of sherds of the distinctive Northern Black Polished Ware towards the later part of this Period indicated intercourse with sites of comparable date in the Ganga-Yamuna valley and also provided a firm datum for fixing the chronology. Below the lowest occurrence of the Northern Black Polished Ware was a I4 to I5 ft. thick deposit yielding the black-and-red ware. Soakage-jars (pl. XXI A) and a ring-well found in this Period throw some light on the system of drainage prevalent in those days. Noteworthy finds in this Period included beads of semi-precious stones, glass and terracotta and bone objects (pl. XXII).

The succeeding Period, dating from about the first century B.C. to the fourth century A.D., was marked by the presence of the Red Polished Ware in the well-known sprinkler-form, which is found widely distributed in western and central India. Notable antiquities of this Period comprised exquisitely-decorated shell bangles (pl.-XXI B), terracotta figurines and copper objects, including antimony-rods and a bell with an iron tongue. Part of a brick structure was also encountered in the upper levels of this Period.

The last occupational Period (after the fifth century A.D.) yielded a non-descript class of pottery both in black and in red-slipped ware, showing a predilection for grooved shoulders and carinated forms. Painted glass bangles and a tiny image of Ganesa formed the typical finds of this period.

PURANA QILA, NEW DELHI.—With a view to ascertaining the antiquity of the site and finding out if it was identifiable with Indraprastha of old, a trial-excavation was carried out by Shri B. B. Lal of the North-western Circle.

The excavation revealed that the site had been under occupation round about I000 B.C., when the people used distinctive bowls and dishes of the Painted Grey Ware. The metal chiefly used was copper, of which sickles, nail-parers, antimony-rods, etc., were found.

By the sixth century B.C. the Northern Black Polished Ware had come into use. Houses were now constructed of kiln-burnt bricks, and terracotta ring-wells were used for soakage of refuse-water (pl. XXIII). Copper was supplemented by iron, and a system of coinage (punch-marked and cast copper coins) came into being.

Thereafter, the site came successively under the sway of the rulers of Mathura in the second century B.C., the Yaudheyas in the first century A.D. and the Kushans in the second-third centuries A.D. (pl. XXIV A). The pottery now used was dull red, with a variety of stamped designs (pl. XXIV B). Among other objects, particular interest attaches to the excellently-moulded terracotta figurines in the Sunga style from the early levels of this period.

The excavation could not be completed, and thus it is not possible to say how much later than the Kushan period the site continued under occupation.

AHAR, DISTRICT UDAIPUR.[1]—The village of Ahar, about 3 furlongs from the Udaipur Railway Station, is known in medieval inscriptions as Aghatapura. It was the capital of Guhila kings, the ancestors of the Ranas of Mewar, before they migrated to Chitor. Close to it, on the bank of the rivulet, also called Ahar, lies a mound locally known as Dhulkot. A trial-excavation had been undertaken here by the Rajasthan Archaeological Department in I952. However, from the single trench then excavated, the sequence of cultures was not clear. Excavation was, therefore, resumed here this year.

The occupational deposit of over 30 ft. represented two main cultures separated by a break. The first occupation started over a thin sandy deposit of natural soil underlain by rock-beds of the Aravalli system. Its characteristic industry was a black-and-red ware, the like of which has in recent years been found at several sites in central and western India. The ware had a long life at Ahar, occupying that it did a thickness of nearly 20 ft., and could be divided into three phases. In the lowest phase the texture and' fabric of the ware were rather coarse, and the pots were polished on the exterior only. In the middle phase they became finer and were polished both inside and outside. A large number of them were also painted, usually in white but sometimes in black, with patterns of parallel lines and dots. In the final phase a devolution in the ware appears to have set in. Another ceramic tradition, a red ware painted in black on a slipped surface, also made its appearance in this phase. Throughout its occurrence the black-and-red ware was associated with a plain red ware with incised designs on shoulders. In the upper levels of this lower culture were found soak-wells lined with rings of baked clay, which have been found almost all over India at early historical sites.

A couple of microliths were also found in the middle and upper strata bearing the black-and-red ware, which lends further support to the view that at Ahar the ware was an extension from central and western India.

The upper culture was characterized by a plain red ware in numerous shapes, some of which, such as lids with miniature jars serving as knobs, lids with lamps on rim and pear-shaped jars, recall similar shapes from historical sites in northern India and Madhya Bharat. Votive tanks were also a feature of this culture.

[I] Information from the Chief Superintendent of Archaeology and Museums, Rajasthan State.

The continuous occupation of the site over a long period was also evidenced from several building levels. The houses were built either of stone or of mud-bricks, and they were roofed with earth laid on bamboos and wattles. There was evidence that entire houses sometimes crumbled down owing to fire. Houses in the top levels of the lower culture were provided with earthen bins for storage and fire-places for cooking (pl. XXV).

As the beginning of the black-and-red ware in central India is dated to *circa* 500 B.C. or earlier, we may assume that the lower culture of Ahar went back to that period. The upper culture was probably contemporaneous with Kushan times.

MATHURA.—The importance of Mathura in early history, the rich literary tradition behind it and, above all, the valuable collection of coins, terracottas, inscriptions and stone sculptures recovered from the surface and from sporadic digs pre-eminently point it out as a most promising site for systematic excavation. The presence of the Northern Black Polished Ware and the recent discovery of the Painted Grey Ware at the vast Katra mound, which represents a large part of the ancient urban settlement, provided additional incentives. Furthermore, an exploratory survey revealed the existence of two rings of mud-ramparts, the first elliptical in shape and the second quadrangular and comprised within the first, as if signifying a citadel. The small-scale excavation of this year was the joint effort of Shri M. Venkataramayya of the Northern Circle and Shri Ballabh Saran of the Headquarters office.

A small trench was laid about 500 ft. to the north of the superimposed mosque of Aurangzeb. Overlying the natural soil, of compact clay and *kankar* bands, at a depth of 42 ft., where the area under excavation was very limited, were found a few sherds of handmade pottery. Within the narrow space of the trench no Painted Grey Ware was found, but the first 6 ft. over the natural soil were equally devoid of the N. B. P. Ware and contained only types in plain grey and polished black wares found at Hastinapura. The other finds were terracotta discs, balls, beads and a boat-shaped bird and perforated pottery. On the basis of analogous finds from other sites the Period may be ascribed to the sixth century B.C.

The second Period was characterized by the use of the N. B. P. Ware and was divisible into three sub-periods. The earliest of them yielded remnants of bamboo-and-reed huts with scanty baked bricks, bone needles or styli, carnelian amulets and beads and figurines of Mother-Goddess in grey and animals, including a dog, in red terracotta. Three ring-wells also belonged to this sub-period. In the middle sub-period were found square copper coins, gadrooned and cylindrical terracotta beads, ear-ornaments, etched carnelian beads, copper antimony-rods, grey terracotta figurines of Mother-Goddess with applied girdles (pl. XXVI A, top left) and elephant-figurines with lozenge-shaped eyes and bodies decorated with punched, stamped or notched circlets and enormous tusks (cf. pl. XXVII B), The last sub-period saw a vigorous building-activity in baked bricks, three phases of a coppersmith's furnace and workshop, with several moulds, copper coins and beads of shell, glass and crystal. The terracotta female figurines (pl. XXVI B) with gorgeous head-dresses and monkeys with three legs, possibly serving some religious purpose, were mostly in red but sometimes in grey. Usually one side of the figurines was

moulded. Though no plan of any house was found in the small area, there were well laid-out walls, drains and ring-wells (pl. XXVIII). The period came to a close about the second century B.C.

There was then a temporary desertion of the site, during which the last ring-wells were completely sealed. The third Period was notable for various types of beads in crystal, agate, carnelian, lapis lazuli, faience, jasper and shell, bone dice, copper coins including those of the Kushans, stone caskets and a turquoise-blue glazed finial.

The terracotta figurines of dwarfs and grotesques of the fourth Period (pl. XXVII A), showing the use of double moulds, were identical to those found at Ahichchhatra in levels datable to A.D. I00-350.

Period V ended about the sixth century, as indicated by the.existence of terracotta sealings and coins of the early and late Gupta periods, a Naigamesa figurine and several terracotta figurines of horse-and elephant-riders characteristic of that age.

RAJGIR, DISTRICT PATNA.—Renewed excavation at the site of Jivakamravana under Dr. D. R. Patil of the Mid-eastern Circle exposed a few more buildings, of which another elliptical structure, running parallel to the one found last year, with two large halls of uncommon dimensions and plan, is worth noting (fig. 4; pl. XXIX). The pottery was of the same crude red ware as had been found last year. Some iron nails, terracotta balls and animal-figurines formed the other finds.

A few trial-trenches were sunk in the high lands near Maniyar Math with a view to finding out the stratigraphical sequence relating to the introduction and disappearance of the Northern Black Polished Ware at Rajgir. They, however, failed to yield any substantial evidence, for the N. B. P. Ware, associated with black and fine red wares, persisted from the third layer down to the natural rock. Remains of a residential building built of rubble in mud and datable to the earliest post-N. B. P. Ware level were unearthed along with a ring-well and a circular masonry well. The other antiquities included iron nails, terracotta figurines and copper coins.

KAUSAMBI, DISTRICT ALLAHABAD.[1]—The University of Allahabad under Shri G. R. Sharma continued its operations at Kausambi this year as well, the main objectives being the completion of the excavation at the Ghoshitarama monastery and the excavation of the rampart and the eastern gateway.

By extending operations towards the western and southern sides of the previous digs, it was possible to lay bare almost the full plan of this sector of the monastery. The plan in this part was dominated by a massive *stupa,* roughly square on plan with doubly-recessed corners, surrounded by chapels for monks. Inside the courtyards were exposed a number of smaller *stupas* and a small shrine of Hariti. The most important structure, however, was the southern boundary-wall of the Ghoshitarama monastery (pl. XXX), standing to a height of I5 ft. at places. The discovery of floors of different sub-periods built against it proved that this height was the result of the accretions of different rebuildings. The length of the wall exposed so far was I8I ft., and its width

[1] Information from Shri G. R. Sharma.

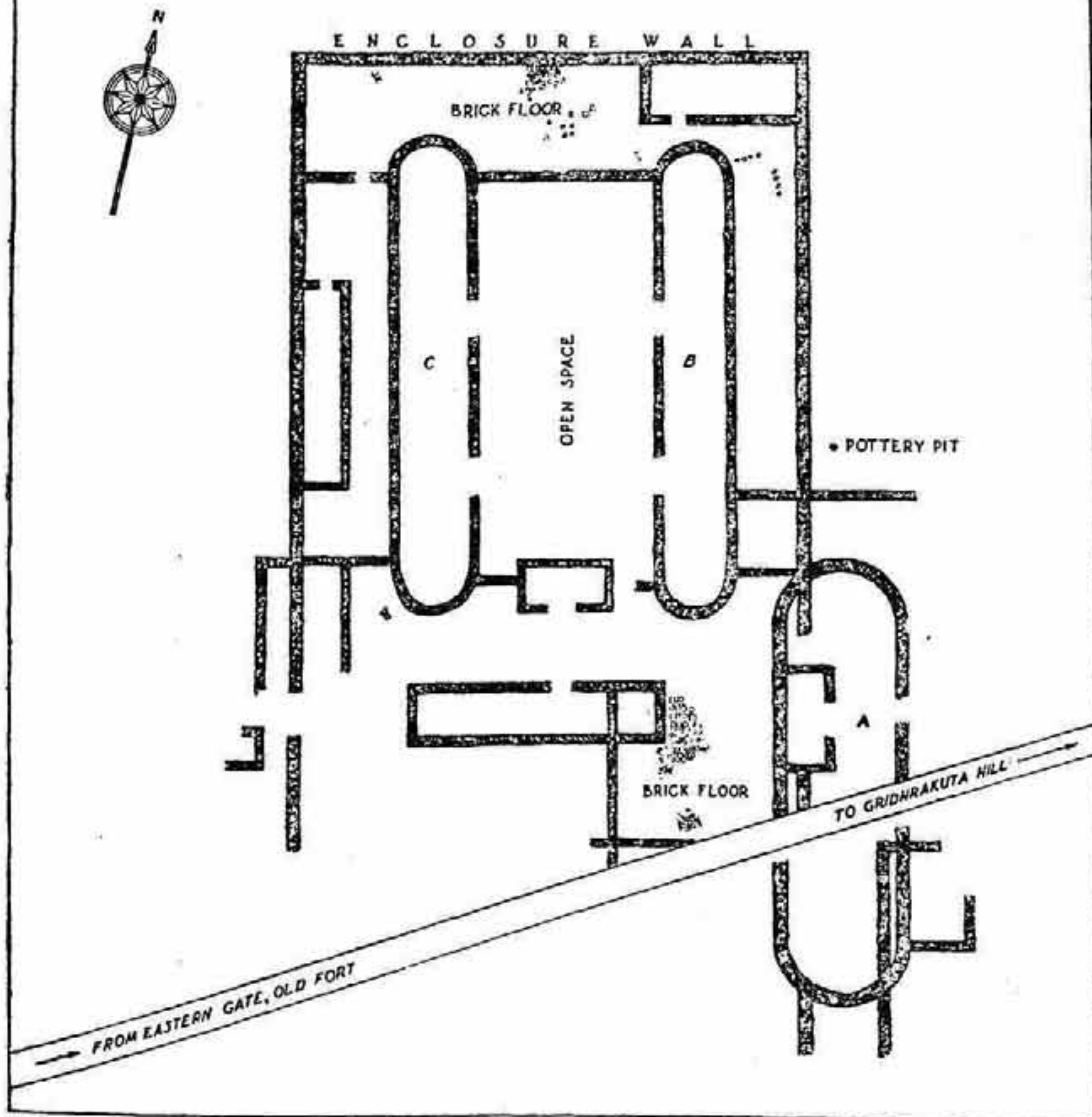

JIVAKAMRAVANA RAJGIR: 1954-55
SCHEMATIC PLAN
SCALE OF
20 0 20 40 60 80 FEET
10 5 0 10 20 METRES
N
ENCLOSURE WALL
BRICK FLOOR
C
OPEN SPACE
B
POTTERY PIT
A
BRICK FLOOR
TO GRIDHRAKUTA HILL
FROM EASTERN GATE, OLD FORT

FIG. 4

varied in different periods from I3 ft. 6 in. to 9 ft. 6 in. Available evidence shows that it had been built either in the reign of Bhadramagha or his successors towards the close of the second century A.D. and continued in existence till the third quarter of the sixth century.

A distinctive feature of the eastern gateway was the presence of a curtain in the form of a mud-bund, 305 ft. in length and 72 ft. in average width; between it and the rampart was a passage 25 ft. wide. Beyond the curtain and separated from it by a 300-ft. wide moat were two small mounds serving as watch-towers.

Though only a portion of the northern side of the gateway was laid bare this year, this, together with the observation of certain brick-robbings, was sufficient to allow a few inferences about the plan of the gateway. The northern wall, 262 ft. in length and in width ranging from 5 ft. 4 in. to 6 ft. 6 in. in different sub-periods, its southern face remaining in the same plumb throughout, and the extensively-robbed western wall, traced to a length of 44 ft., beyond which it had been washed away by a deep rain-gully, met each other at right angles. A third wall, the existence of which was revealed in recent brick-robbings, was noticed to start with the other end of the curtain and run across the rampart. It appeared likely, therefore, that these three walls represented the three sides of the gate, the curtain completing the system at the exterior.

The rampart had at least three clear stages of repairs subsequent to its original construction (pl. XXXI). While there was no clear evidence that the brick flanks of the gateway were coeval with the rampart, it was definite that they were integral with the second stage of the rampart, which was separated from the first stage by a long gap of time. In the third stage both the rampart and the gateway flank were heightened, but it is not certain whether the latter also underwent modifications along with the fourth stage of the rampart.

The excavation yielded a large number of coin-moulds and sealings, mentioning the names of certain kings which help in reconstructing the history of Kausambi in the sixth century. Of the sealings, there was one of Hunaraja (pl. XXXII B), identified with Toramana, whose seal had been discovered earlier. The names of other two kings, Dhruvadatta (pl. XXXII C) and Sivadatta or Sarvadatta, introduce to history a new ruling dynasty, which, on palaeographical grounds, should be placed towards the second quarter of the sixth century and might have gained power after the withdrawal of the Hunas.

Of the other interesting antiquities unearthed this year one was the fragment of a richly-decorated *purnaghata* and another terracotta plaque representing a warrior driven on a chariot of four horses (pl. XXXII A). The former contained the representations of winged *yakshis* issuing out of a rich foliage of lotus-flowers and leaves (pl. XXXIII). Other finds included a number of sculptures, terracotta figurines, beads, tools and weapons.

KUMRAHAR, DISTRICT PATNA.[1]—In continuation of the work done in I95I-52, the area of the Mauryan pillared hall received attention again this year. The previous

[1] Information from Shri Vijayakanta Mishra.

work had been sufficient to disprove Spooner's theory that the pillars had sunk into the unplumbed depths of the earth. This year a few trenches were laid to the south of the excavated area with interesting results. The ashy layer, the result of the conflagration which had destroyed the wooden superstructure of the hall, was encountered in the trenches nearest the excavated area but was absent in those further south, thus indicating the southern extent of the hall. It was clear that the hall had all told eightyfour pillars (of which seventytwo had been located by Spooner), i. e., eighty in the main hall and four at the entrance, located at the southern face of the hall, where three stone fragments of what looked like bases of Mauryan capitals were also found. At a depth of I8 ft. were discovered wooden bases (pl. XXXIV A) for the pillars, intended to distribute their load. It was also demonstrated that there had been a canal coming from the east in the same alignment as the wooden platforms found by Spooner (so that they seemed to have been designed to remain under water) and flanking the southern limit of the palace.

The excavation also yielded evidence about the date of the destruction of the hall. As the ashy deposit was found superimposed by layers belonging to the Sunga the hall must have been destroyed about the middle of the second century B.C. Fragments of its shattered pillars were found all over Kumrahar in association with other antiquities belonging to I00 B.C. to A.D. I00.

According to the excavator, the collective evidence shows that the ashy layer, 7 ft below ground-level, was the floor of the hall, the Mauryan level being 4 ft. lower. The pillars, to judge from the available data, were 3I ft. high, the lowest 5ft. of which were buried underground, so that they held the roof at a height of 22 ft. above the floor.

In the trenches laid near the western graveyards were encountered rooms of the monastic type belonging to two structural periods, the earlier one being of *circa* I00 B.C. to A.D. I00 and the later one of *circa* A.D. I00 to 300

Excavation to the west of the Arogya-vihara (pls. XXXIV B and XXXV A) also led to interesting discoveries. Built over the remains of earlier structures an apsidal building with the foundation of a circular *stupa* was exposed at a depth of about 4 ft. When the apsidal structure with its *stupa* collapsed, a new *stupa*, square on plan and apparently with a circumambulation-path, was built to its east at a distance of I8 ft. from the centre of the previous *stupa*. The stucco *gandharvas*, *mithuna*-figures and Buddha-figures, found in the previous excavations, now seemed to have belonged to the façade of this Gupta *chaitya*-hall with a square *stupa* as the object of worship. The excavation in this area is not yet complete.

TAMLUK, DISTRICT MINDNAPUR.- Identified with the ancient Tamralipti, famous in literature as a great emporium and a seat of learning, Tamluk has long been known to archaeologists from its yield of coins, terracottas and pottery, some of unusual shapes, either from the surface or from haphazard diggings. The place was taken up for excavation this year by the Eastern Circle under Shri M.N. Deshpande, partly in response to a public demand but primarily to find out its archaeological potentiality and cultural sequence. Operations at seven different places revealed that the town had been in occupation from the neolithic to modern times with occasional breaks.

Period I, characterized by neolithic celts and an ill-fired pottery, was scantily represented.

The cultural equipment of Period II (third-second centuries B.C.) consisted of beautiful and typical terracotta figurines (pl. XXXIX), cast copper coins and a pottery bearing close affinity to that of contemporary northern India.

In Period III *(circa* first-second centuries A.D.) Tamluk seems to have shared with other ports on the Indian coasts trade-contacts with the Roman world, as witnessed by a sprinkler and the profuse occurrence of the rouletted ware (pl. XXXVII), both believed to be ultimately originating from Rome. A brick-built stepped tank exposed in one trench and a ring-well and a soak-pit in another belonged to this period (pl. XXXVI). Banded agate beads were also associated with this Period.

Period IV, which was not very well represented, produced some beautiful terracottas of the third-fourth centuries, showing Kushan and Gupta influence (pl. XXXVIII B). Mention may be made of a superb terracotta figurine (only the lower part found), which was characterized by a graceful modelling and transparent drapery of the early Gupta period.

The subsequent history is rather difficult to reconstruct. The place appears to have lost its earlier importance, and whatever evidence could have been pieced together has been destroyed by disturbances caused by the digging of water-tanks. Sporadic finds of sculptures of the Pala and Sena periods by the local people in the course of digging tanks throw some light on this otherwise dark period.

The remains of the last phase (eighteenth-nineteenth centuries) were represented by the topmost deposits, contemporary with a number of brick structures constructed by local Rajas and salt-factory owners.

AMIRTHAMANGALAM, DISTRICT CHINGLEPUT.—The excavation at Amirthamangalam in the lateritic zone of Chingleput District, where urn-burials occur without any obvious megalithic appendage, was carried out by the Southern Circle under Shri N. R. Banerjee as a complement to the excavation of megalithic monuments at Sanur in the granitic zone of the same District. The objective was to find out the mode of burial and how far it resembled or differed in nature from the urn-burials surrounded by stone circles that are met with in the region.

The location of the urn-burials on a lateritic plateau, surrounded at the fringe by a number of rain-fed ancient irrigation-tanks, conforms to the general principle of the situation of megaliths elsewhere in the District. The exposed and damaged urns (pl. XL) at this extensive site, numbering about two hundred and fifty, displayed a large variety of sizes and shapes ranging from oval to nearly globular. All were hand-made, thick, of coarse granular fabric and pale red colour and had rolled rims with or without additional decorations below and either pedunculated bottoms, which pinned them into the earth, or heeled solid bottoms, flat at the lower end, varying in diameter from 4 in. to II in.

Excavation of a few urns (pls. XLI and XLII B) showed that they were each placed in an adequate pit cut into the lateritic gravel and, wherever necessary, even into the underlying lateritic bed-rock. The skeletal material, consisting of a selection of uncal-cined, disarticulated and excarnated bones, including the skull, long bones, loosened teeth

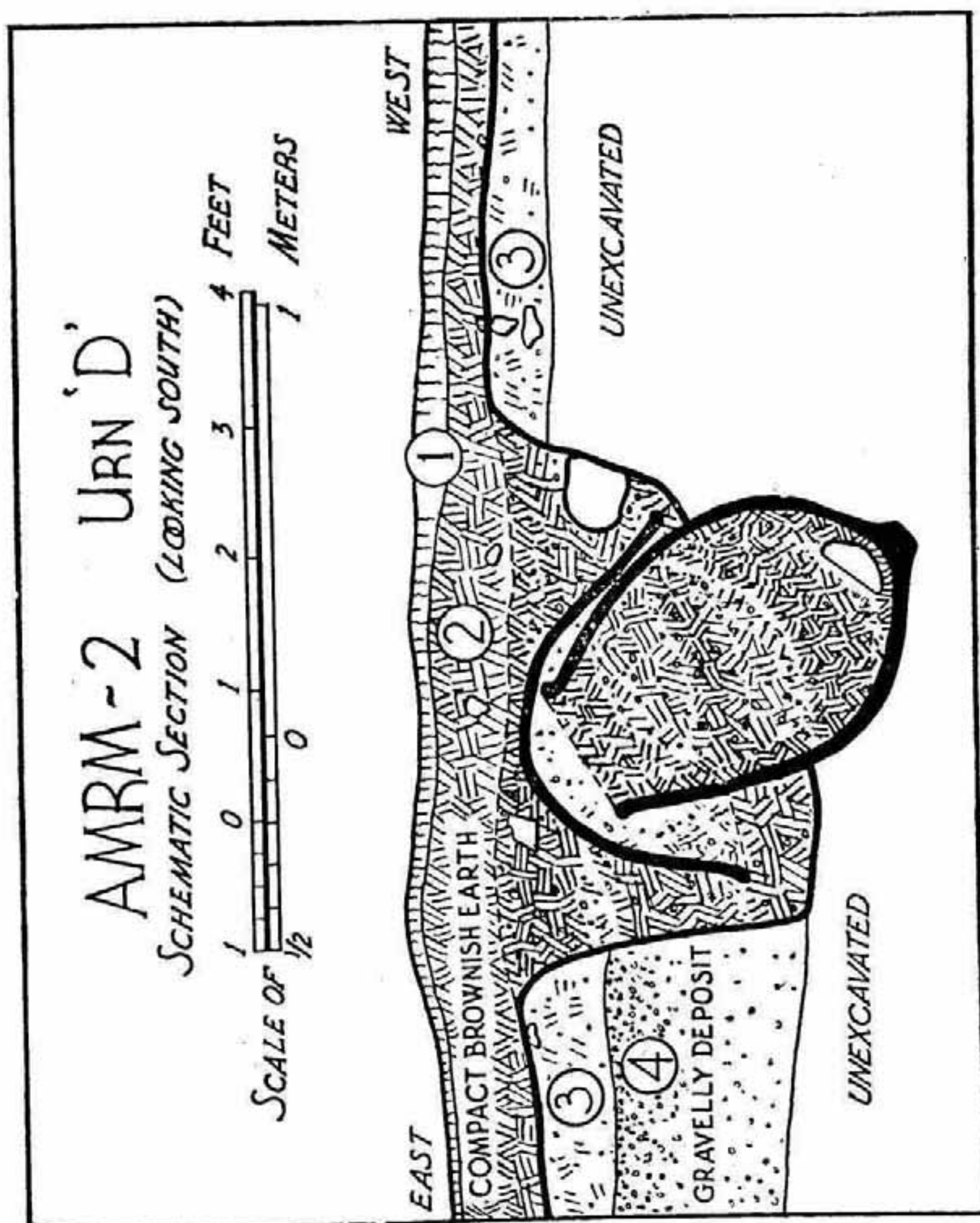

AMRM-2 URN 'D'
SCHEMATIC SECTION (LOOKING SOUTH)
SCALE OF
1 0 1 2 3 4 FEET
½ 0 1 METERS
EAST
WEST
COMPACT BROWNISH EARTH
GRAVELLY DEPOSIT
UNEXCAVATED
UNEXCAVATED
1
2
3
3
4

FIG. 5

and fragments of ribs, was deposited at the bottom (pl. XLII A). Over the skeletal deposit were placed a few (three or four) pots in Black-and-red Ware. A few iron objects were also placed inside. The urns were then filled up with earth and covered with dome-shaped lids (a variant in the form of an oblong lid was also rarely noticed). Being large and commodious, the rims of the lids reached the belly-level of the urns and sealed the burials completely. The lids had the same type of rolled rims and had the same fabric and colour as the urns. A few pots were also placed over them. The pit was thereafter covered up, and a few blocks of laterite, deliberately cut, appear to have been invariably placed along its edge. The tumulus, if any, over the interments was not extant, but the pit was sealed by an overlying layer of loose gravelly earth (fig. 5).

On the whole, these burials appear to be simpler than the elaborate megalithic burials. The absence of the stone circle, the comparative paucity of pottery and iron objects and the smaller quantity of skeletal material, all suggest a less sophisticated mode of disposal of the dead. Whether they indicate a form earlier than the full-fledged megaliths or are a degenerate form thereof requires further investigation.

NAGARJUNAKONDA.—As a result of intensive excavation since October I954, seven important sites were opened up, revealing to view structural remains, mostly *viharas,* (pl. XLIII A), *stupas;* an assembly-hall, a closed bath and two temples, one of them of Hariti, belonging, generally speaking, to two or three structural periods.

Site III revealed a monastery with an open courtyard, an inscribed potsherd found therein giving its name as *Nakatara* ('superior to heaven'). Also found here was an inscribed pilaster dated in the tenth regnal year of the Ikshvaku king Virapurushadatta and referring to some munificence for the benefit of the Buddhist and other faiths.

Site VI revealed a monastic unit with the *mahachaitya* on the west, two votive *stupas* on the east and a *vihara* of four cells on each side. The *mahachaitya* was of chipped and cut rubble. A number of broken images of Buddha and a few sanitary jars and bowls were found in the monastery, suggesting that it dealt with stores such as of pottery and images.

Adjoining Site VI was exposed another *mahachaitya,* typically Andhra, with *ayaka*-platforms and with a diameter of 48 ft. On plan it was a wheel with a cylindrical hub and ten spoke-like arms (pl. XLIV B). Its outer facing including the ayaka-platforms had an excellent plaster finish, 2 in. thick.

The next site, VIIA, was the most important of the recent excavations. It revealed a temple of Hariti juxtaposed on the contours of the hill. To reach the temple one had to go up the hill through a quadrangle, 54 ft. 6 in. x 45 ft., with arrangements on its four sides for a brick gallery, edged with Cuddapah slabs. At its south-west corner was a stone bench for visitors to assemble and wash their feet (pl. XLV B). The water used for washing was carried away by a drain provided nearby. A circular abacus-part of a column was situated right at the centre of the quadrangle. One of the stone benches bore the *triratna* and the bow-and-arrow marks. Another stone bench had an inscription on it reading *Kama-sara* or 'arrow of Love'. The shrine was approached through this wide enclosure by a flight of steep steps leading to the top of the hill (pl. XLV A). In the shrine, flanked by two bigger rooms, was an image of Hariti in limestone, torso missing, seated

with her legs hanging down. The decorative features of the image would warrant the fourth or fifth century as the possible date of the temple. Also was found in this area an inscribed pillar referring to the putting up of a perpetual lamp *(akhaya-nivi)* on the occasion of some *utsava* or festival (pl. XLVI B). A large number of ivory bangles were recovered in front of the Hariti shrine.

The existence of .the Hariti temple explained another structure behind it, a temple of gigantic proportions, that had two structural phases, both post-Ikshvaku (pl. XLIII B). The earlier construction was the sanctum, near which was a drain for taking away the *abhisheka*-water. This early shrine was closed at a later stage and widened on its east into a *mandapa* with arrangement of steps in front and with the difference that the image in its new orientation faced east instead of west. A circumambulatory passage went round the early structure, the walls of which, on the outside, contained niches for holding the images. Whether it was apsidal on plan or not awaits further excavation.

Site V yielded a very interesting *mahachaitya* in the shape of a wheel, 27 ft. in diameter with four spokes meeting a circular hub (pl. XLIV A). An interesting feature was that it stood on another circular *chaitya*, in an orientation which would suggest that the latter was an earlier *chaitya.* An inscribed pillar, found in the vicinity recorded a donation by a *sramana,* who was a *kulputra* (of high family), with the noble desire that it should be a gift for all Brahmanas.

Storage-jars, vessels for carrying food, ceremonial pots and begging bowls, all denoting monastic use, were found at different sites. A vessel showing a female figure in place of the spout was of special interest. Among the decorative designs on the pottery were spirals, *svastikas,* hatches, solar symbols, criss-crosses, rosettes, plaited courses, rainbows, chevrons, beads, crosses, scallops, herring-bones and conventional foliage.

The finds, which included limestone and terracotta objects (pls. XLVI A and XLVII), discovered so far related to dates ranging between the second and perhaps the fifth centuries.

TILDAH, DISTRICT MIDNAPUR.[1]-A trial-excavation conducted by the University of Calcutta under the leadership of Shri K.G. Goswami at Chandpur mound in the village of Tildah brought to light brick-built structures of two phases, the earlier one originating in the Gupta period. The limited area taken up for excavation did not permit any definite idea about the plan or purpose of these structures. Besides pottery, the finds consisted chiefly of terracottas (pl. XXXV B and C), of which a fairly large number were encountered. Of these, the majority belonged to the Gupta and post-Gupta periods. Of the pre-Gupta finds, mention may be made of a terracotta figurine, reminiscent of Kushan art in dress and technique and a sherd of the Northern Black Polished Ware.

KOTTURU, DISTRICT VISAKHAPATNAM.-The South-eastern Circle under Shri R.C. Kar undertook an excavation at one of the five mounds, near the village of Kotturu, situated on the left bank of the Sarada river on the southern slopes of the Panchadarla hill. Excavation has so far revealed two structural phases, the later one, constructed of large

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[I] Information from Shri K.G. Goswami.

but fragmentary bricks, forming part of a Buddhist *vihara-complex.* Remains of an earlier building phase, the nature of which still remains to be determined, were met with at the northern end of the mound. The pottery was primarily of dull red ware, but sherds of bright red and grey wares were also encountered. The work will be continued next year.

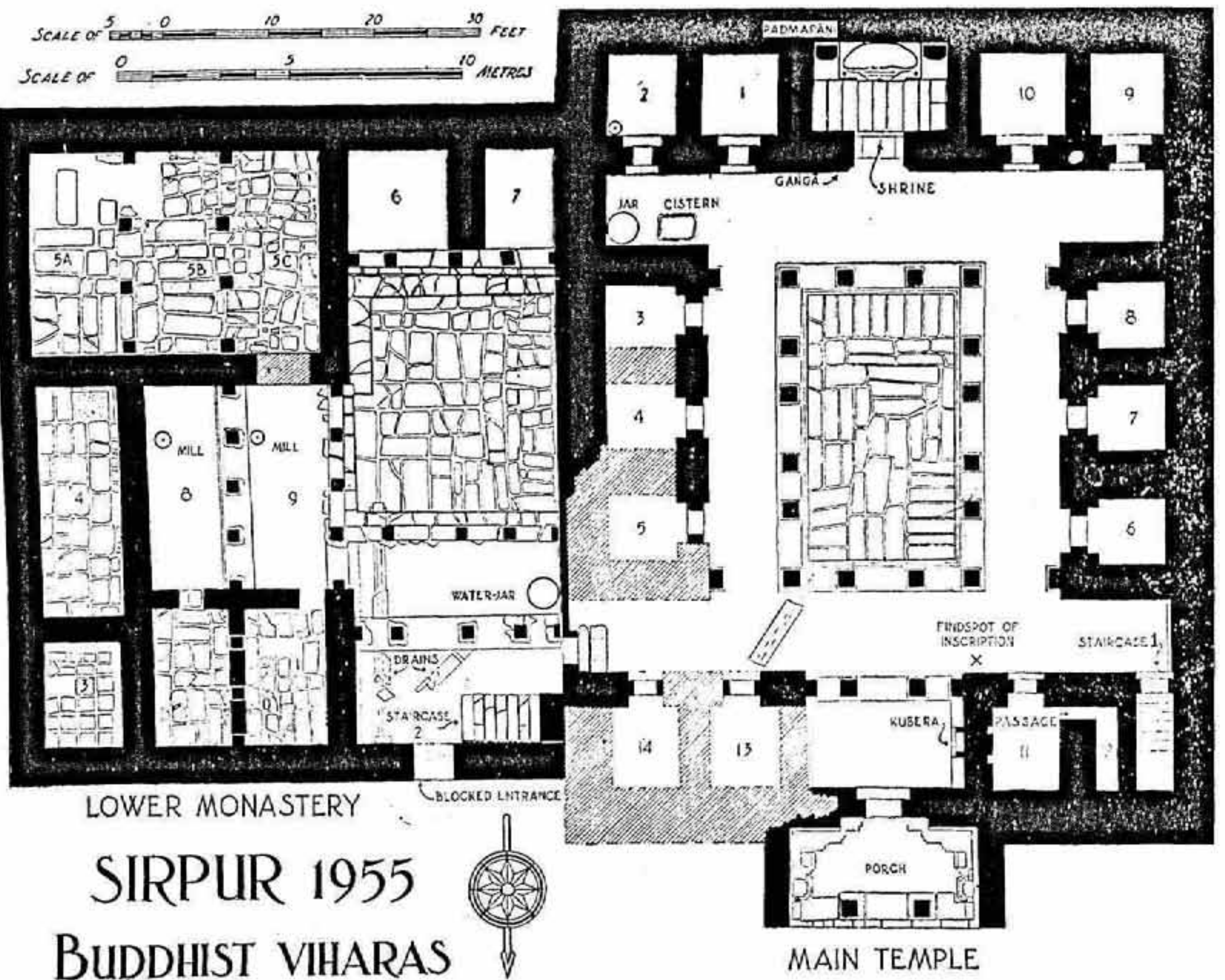
SIRPUR, DISTRICT RAIPUR.[1]—Under the auspices of the University of Saugar and with financial assistance from the Government of Madhya Pradesh, Dr. Moreshwar G. Dikshit excavated two prominent mounds situated about a mile to the south of the well-known Lakshmana temple. The first site yielded the remains of two large Buddhist monasteries adjacent to each other, styled respectively as the Main Temple and the Lower Monastery (fig. 6). The second site was found to contain the ruins of several small structures including *viharas.*

The Main Temple (pl. XLVIII) was rectangular on plan, with an elaborately-carved gateway to the north beyond the porch, flanked on either side by tall *dvarapalas* and with a large number of Yakshas along the side-walls of the porch. The temple combined a happy blending of certain architectural features common to both a temple and a monastery. Equipped with a porch, a *sabhamandapa* resting on sixteen massive stone pillars and a shrine, it exhibited the essentials of a temple, while in the arrangement to a row of cells around the central courtyard it followed the familiar monastic plan. The shrine in the central cell in the back row contained a colossal image of Buddha, about 6½ ft. in height, seated on a *simhasana* in the *bhumisparsa-mudra* (pl. XLIX A). On the right of the image stood a life-size figure of Padmapani. The door of the shrine was adorned with a tall figure of Ganga. According to an inscription the structure was built by one Bhikshu Anandaprabhu in the reign of Balarjuna in about the first quarter of the eighth century. The monastery remained in occupation for some two hundred years, after which the Buddhist monks were ousted by a people professing the Saiva faith, who effected extensive repairs and changes in the building. The monastery was finally abandoned in about the end of the eleventh century.

The Lower Monastery was a rectangular structure with a large paved courtyard in the middle and rows of irregularly-grouped cells.

Antiquities were prolific both in variety and quantity. The residents followed different professions like agriculture, smithy, pottery-making, goldwork, etc. The implements of all these artisans were found. One room produced a complete set of the goldsmith's tools, including pincers, a pair of tongs, a small hammer, a tripod and even the touchstone with marks of gold-testing. Many of the bronze images were undoubtedly made locally, and amongst them mention may be made of a fine statue of Buddha plated with gold and having the eyes set in silver; to add to the colourfulness, the lips were covered with copper to imitate the natural colour. In some bronzes, which were made by the *cire perdue* process, the sand in the interior was still adhering to the metal. On the strength of the number of images found in the excavation as also those accidentally discovered previously at Sirpur in a hoard, it can be said with fair certainty that an

[1] Information from Dr. Moreshwar G. Dikshit.


SCALE OF 5 0 10 20 30 FEET
SCALE OF 0 5 10 METRES
PADMAPANI
GANGA
SHRINE
JAR
CISTERN
WATER-JAR
DRAINS
STAIRCASE 2
BLOCKED ENTRANCE
MILL
MILL
FINDSPOT OF INSCRIPTION
STAIRCASE 1
KUBERA
PASSAGE
PORCH
LOWER MONASTERY
SIRPUR 1955
BUDDHIST VIHARAS
MAIN TEMPLE

independent school of craftsmen flourished here, and their workmanship was greatly influenced by late Gupta plastic tradition. A circular copper plaque engraved with a Buddhist text (pl. XLIX C) deserves mention.

The three monasteries at the second site were built on the plan of a large central hall surrounded by a network of cells, one of which was invariably meant for the shrine, and generally a spacious stone-paved courtyard. The walls were made of bricks with stone foundations. A large jar, either placed in the central hall or in the open courtyard, for the provision of water, was a usual feature. One of the monasteries seemed to have been a nunnery as shown by the occurrence of a large number of shell and glass bangles. In the basement of an underground chamber in one of the rooms in this monastery was found an exquisitely-carved miniature *stupa* in crystal and a gilt *vajra.* A number of seals with Buddhist texts were found in a courtyard (pl. XLIX B).

The Saivite intrusion in these monasteries was indicated by the discovery of crude plaques of Ganesa, Mahishamardini, Siva-Parvati, etc.

The pottery from the monasteries, was the usual red ware variety, utilitarian in character and without any sophisticated forms.

KARIAN, DISTRICT DARBHANGA.[1]—Trial-excavation was done by the K. P. Jayaswal Research Institute at Karian, supposed to be the birth-place of the philosopher Udayana-charya, and three structural periods, belonging to *circa* 900-I800, were found. The site has suffered extensively from the floods of the river Bagmati, and except common antiquities, e.g., beads, terracottas, iron objects, copper antimony-rods, etc., nothing worth noting was obtained.

BHATINDA FORT.—The Bhatinda Municipality had sought permission of the Department to build a water-reservoir at an elevated point within the fort. Before granting permission, it was considered desirable to carry out some trial-diggings in the area so as to ascertain the antiquity of the underlying strata. Accordingly, a small trench was dug down to a depth of about 50 ft. below surface by Shri Raghbir Singh on behalf of the North-western Circle. The natural soil was, however, not reached. On the basis of the pottery recovered from the excavation it was found that the site went back to the early medieval times *(circa* twelfth-thirteenth centuries). Of great interest was a mud-brick wall with a burnt-brick revetment (?) in the lower levels. The mud-brick wall was uncovered to a depth of about 37 ft. without reaching the bottom.

[1] Information from Shri Vijayakanta Mishra.

3- EPIGRAPHY

A. SANSKRITIC AND DRAVIDIAN INSCRIPTIONS

The Epigraphical Branch of the Department examined seventeen copper-plate charters and secured impressions of over three hundred stone inscriptions, besides Arabic and Persian inscriptions mentioned below (p. 30). Some of the important records are noted here.

INSCRIPTION OF ASOKA.-A new version of the Minor Rock-edict of Asoka in the village of *Gujarra* in Datia District of Vindhya Pradesh (pl. L) is the outstanding epigraphical discovery of the year. Its importance lies in the fact that it is the second of the many records of the emperor so far discovered that mentions Asoka as his personal name, the first being the Rock-edict at Maski. There are some passages in the present inscription which are not found in any other version of the Minor Rock-edict.

EARLY PRAKRIT RECORDS.-A fragmentary inscription, originally discovered at the ancient site of *Palikhera* at Mathura and now preserved in the local museum, purports to record the setting up of an image of Sakyamuni (i.e. Buddha) and the construction of a shrine for it by a person names Guhasena. The record refers to the reign of the Kushan emperor Vasudeva and cites the year 64 of the Kanishka era, thus narrowing down the wide gap of fourteen years between the earliest known date of this king and the latest known date of his predecessor Huvishka to four years only. Of some fragmentary inscriptions discovered in the course of excavation at *Nagarjunakonda*, one refers to a *kulaputra* (nobleman) and another to the grant of an *akhaya-nivi* (a perpetual endowment). Another Brahmi inscription from *Kondavite* near Borivli in Bombay State records a gift to a *vihara* made by a Brahmana.

GRANT OF CHANDAVARMAN.- Among the copper-plate charters examined during the year, this set of three plates is the earliest. It is engraved in the southern alphabet of the fifth century, the language being Prakrit. The record registers a grant of the village Garikatuka as an *Agrahara* by king Chandavarman of the Salankayana dynasty.

TWO INSCRIPTIONS OF THE SAILODBHAVAS OF KONGODA.- These are two copper plate charters, one of Sainyabhita Madhavavarman II Srinivasa (*circa* 6I0-665) and the other of Manabhita Dharmaraja (*circa* 695-730). The former was discovered at *Purushottampur*, District Puri, Orissa, and is dated in the thirteenth regnal year of the king. Since he is described in the charter as the performer of *asvamedha* and other sacrifices, he seems to have become independent of the yoke of the Gauda emperor Sasanka some time after 6I9, the date of Ganjam plates, but before the thirteenth year of his reign as suggested by the present record. The second Sailodbhava record comes from *Chandeswar* and states that it was issued from Kontalayivasaka by Dharmaraja, the grandson of Sainyabhita Madhavavarman II Srinivasa, in the eighteenth year of his reign.

PALLAVA INSCRIPTION.—This record from *Kanchipuram,* engraved in characters of about the eighth century, is dated in the eighteenth year of the reign of king Narasingap-pottaraiyar and refers to the activities of the Ajivakas and to a temple of Arivar (i.e. the Arhat). From the characteristic epithet *pottaraiyar* borne by the king and from the provenance of the record, the king appears to be identical with Narasimhavarman II Rajasimha.

THREE RECORDS OF THE RASHTRAKUTAS.—An epigraph from *Indragarh* in Madhya Bharat,[1] dated Malava (Vikrama) *samvat* 767 (A.D. 7I0), introduces one Nannappa, son of Bhamana, as a ruler in the Rashtrakuta family. It records the construction of a temple dedicated to the god Siva by Danarasi, who is described as a teacher of the Pasupata school and a disciple of Vinitarasi. The second record is a copper-plate grant of the emperor Govinda III of the Malkhed branch of this family and is dated Saka 726 (A.D. 804). The king is stated to have issued the charter from his victorious military camp on the bank of the river Tungabhadra. A third record, also of this branch of the Rashtrakuta family, is a stone inscription from *Kopbal,* District Raichur, Hyderabad State. It belongs to the reign of king Indra III and cites the Saka year 8II (A.D. 889), as corresponding to the cyclic year Sobhana, but the Saka and cyclic years do not tally. If no mistake has been committed in the year, the date of the present record would suggest that Indra began to take aaive pan in the administration of the empire even during the reign of his grandfather and predecessor Krishna II (877-9I5), about twenty-five years before his own accession to the throne.

TWO WESTERN CHALUKYA INSCRIPTIONS.- From *Panchalingala*, District Kurnool, Andhra State, comes an epigraph dated Saka 990 (A.D. I068) in the reign of Bhuvanaikamalladeva, recording the re-endowment of lands at Juruvumbada in Nalavadi, situated to the south of the river Tungabhadra, for the annual repairs and upkeepof the temple of Panchalingadeva. The king is stated to have renewed the grant, which had been previously made by Vinaya-Satyasraya, i.e. Vinayaditya-Satyasraya (68I-96), when he was camping at Ramesvara-tirtha in Kandur-nadu in the course of *dig-vijaya*. Another Chalukya record from *Rajula-Mandagiri* in the same District mentions a feudatory chief Appabarasa and registers a gift of tax-free land near Mandagiri-tirtha made by him in Saka 993 (A.D. I07I) in favour of *Kannadavergade* Dugganadeva-Bhatta. Mandagiri-tirtha is stated to be situated to the east of the hill in the division of `Naravadi 500'.

INSCRIPTION OF RAJENDRA II.- This epigraph, from *Injigudi*, District Tanjore, is dated in the tenth regnal year of the Chola king Rajendra II (I062) and contains some interesting information. It states that Sankaran Periyan, *alias* Kalyanapuramkonda-chola-Brahmadhirajar, Araiyan Tiruchchirrambalamudaiyan and his brother Sankaran Raman, *alias* Rajamahendrachola-Brahmadhirajar, who were generals of the kind, died on elephants, when the horses of the enemy attacked them. This incident recalls to our memory the death under similar circumstances of the king's predecessor Rajadhiraja I (I054).

EPIGRAPHY

Two COPPER-PLATE CHARTERS OF THE CHAULUKA BHIMA I.-- The *Paliad* (District Gohilwad, Saurashtra) plates of this king, issued from Akasikagrama, register the royal grant of a piece of land in favour of a *vasatika* at Bayada in Vikrama-samvat 1112 (A.D.1055), while the *Bhadresar* (Kutch) plates, dated 1117 (A.D. 1060), record a similar grant of a village in Kachchha-mandala to the Brahmana Govinda hailing from Prasannapura. The *Kayastha* Vatesvara, son of Kanchana, was the drafter of both the charters and the *Maha-sandhivigrahika* Bhogditya their executor.

[1] Information from the Director of Archaeology, Madhya Bharat.

FIVE RECORDS OF THE YADAVA SINGHANA:-- Three of these incriptions come from the villages of *Medikurti* and *Kodumurti* (District Anantapur). All of them refer to the reign of Singhana; two are dated in Saka 1143 (A.D. 1221) and 1149 (A.D. 1227) respectively, while the date of the third one also falls in about the same period. They mention the gods Chittrameli-Desamesvaradeva, Chitramedisrimal-Lalitesvaradeva and the *Sthana-pati* Vyapakadeva and also refer to the guild called *Chitrameli*, which seems to have been formed by agriculturists. Significantly enough, the slabs on which these records are engraved also bear the sketches of a plough (*meli*) together with other figures such as a bull, serpent, drum, *purnakumbha*, etc. Another inscription of the king comes from Prakash, District West Khandesh, and refers to the installation of a temple for Vikramarka. One more fragmentary inscription of the same monarch, dated Saka 1165 (A.D. 1243), comes from *Aurangabad*, Hyderabad State.

INSCRIPTION OF HARIHARA I.---This record comes from *Atakalagudu*, District Kurnool, and is one of the few early inscriptions of kind Harihara I of Vijayanagara. It records that Kameya Nayaka, having consecrated the god Mulasthana Mallinathadeva, made an endowment of lands and cows to the god for the merit of his overlord, the *Maha-pradhana* Machappa Vodeya, brother-in-law of the king. He is stated to have been ruling over 'Sindavadi 12' with Adavani as his capital. The record is dated Saka 1268 (A.D. 1346).

PRINCE OF WALES MUSEUM PLATES OF JAITRASIMHA.---This record, dated Vikrama-samvat 1347 (A.D. 1290) belongs to king Jaitrasimha of the Vaijavapayana family and furnishes his genealogy for four generations. It records the royal gift of the village of Takari in the region of Nandapadra on the banks of the Narmada.

VALLALA-PRASASTI—This is engraved on the left wall of the Rishigopura of the Kamakshi temple at *Kanchipuram.* The poet Chakravarti, who composed the record, calls it *Vallalaguna-stava* and gives in it an account of the relations that existed betweeen the Hoysala kind Ballala III and the contemporary southern powers.

MISCELLANEOUS INSCRIPTIONS.---Some of the other inscriptions examined during the year may be noticed here in a chronological order. A brick inscription from the *Ratnagiri Hills*, District Cuttack, Orissa, containing a record of four line is east Indian characters of the seventh century, seems to refer to the installation of a Jaina image and points to the existence of an early Jaina establishment on these hills, which are famous for their Buddhist ruins. An inscription in the Nagesvara temple at *Narnuru*, District Kurnool, engraved in archaic Telugu characters of the eighth century, records the consecration of the god

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1. Information from the Superintendent of Archaeology, Saurashtra.

Takshakesvara-Bhatara by Nagachandasvami Tippena Periya of the Samkhya *gotra.* An epigraph from *Medikurti,* District Anantapur, records gifts of land made by Jagadala Bhogarasadeva Maharaja in Saka II59 (A.D. I237), and another from *Murugulla,* District Nellore, assignable to the twelfth century, mentions the Telugu Choda chief Tirukalati Devachoda-Maharaja with the epithet *Tenkanaditya.* An inscription from *Sholapur,* dated Saka I575 (A.D. I653), belongs to Muhammad Adil Shah of Bijapur. Another record from *Adoni,* District Bellary, refers to the death of the *Maharaja* Anupasimha of the Rathoda family and his wives in Saka I620 and Vikrama-*samvat* I755 (A.D. I698).

INSCRIPTIONS FROM TRAVANCORE-COCHIN.[1]—The inscriptions in the temples at Kerala-puram, Suchindram, Kanyakumari and Tiruvattar were examined. A Tamil inscription in the Siva temple at *Keralapuram* belongs to the king Vira Udayamarttandavarma Tiruvati Vira-Pandyadeva of the fourteenth century and relates to the grant of certain taxes to the temple of Virakeralesvaram. Another Tamil inscription in the same temple, dated Kollam 782, records that king Vira-ravi Ravivarman rebuilt the temple of Virakeralesvaram. A third record, also from the same temple, states that one Aiyan Aiyan of Parakkotu set up the two pillars containing the sculptures of Cheraman Perumal and Sundaramurti Nayanar in the Kollam year 782. A record from the Krishna shrine at *Keralapuram,* dated Kollam 887, refers to the gift of certain lands by a private individual to the temple during the reign of Ravi Ravivarman Chiravaymutta Tampiran. Four mutilated Tamil inscriptions from the Sthannathasvamin temple at *Suchindram* in the Vatteluttu script belong to the period of Parakesarivarman, Rajaraja, Kesarivarman and Cholantalaikonda Vira-Pandya respectively and record gifts of sheep and lands for perpetual lamps and offerings. The Guhanatha-svamin temple at *Kanyakumari* contains an inscription belonging to the thirtyfirst year of Parakesarivarman Rajendra and recording the gift of fifty sheep for a perpetual lamp by one Manarkadan, *alias* Natuvunilai Danmachchetti, of Manalur on the bank of the Vaigai. An incomplete inscription from the same temple belongs to the Chola king Rajakesarivarman Rajadhiraja and mentions *Rajarajan-salai* and its *salabhoga* the village of Manarkuti. The revival of an old arrangement for the supply of salt required for the Sri-Vallabhapperum-chalai, *alias* Rajarajapperumchalai, from the salt-pans of Manarkuti is recorded in another inscription from the same temple. An inscription from the Adikesavaperumal temple at *Tiruvattar,* in the Vatteluttu script, belongs to the king Vira Udayamarttandavarman of the twelfth century and records the gift of land for services in the temple. The last one is a Tamil record dated Kollam 77[8] and states that the *Orraikkal-mandapa* was constructed by king Vira-ravi Ravivarman.

B. ARABIC AND PERSIAN INSCRIPTIONS

One hundred and sixty-five Arabic and Persian inscriptions were collected and examined. Some of the most important ones are recorded here.

INSCRIPTION OF QUTBU'D DIN MUBARAK SHAH OF THE KHALJI DYNASTY.—This inscription, from *Dholka,* District Ahmedabad, is the only inscription of this king and the

[1] Information from the Government of Travancore-Cochin.

second one of his dynasty, the first being that of Alau'd Din Khalji, discovered so far in Gujarat.

TWO INSCRIPTIONS OF NUSRAT SHAH TUGHLUQ.—Both dated A.H. 797 (A.D. I394-95), one is from *Mangrol,* District Sorath, and the other from *Ghogha,* District Amreli. These are the only inscriptions of the king so far known to exist. The one from Ghogha is very important, as it gives the title of the king, which was not hitherto known.

FOUR INSCRIPTIONS OF FIRUZ SHAH TUGHLUQ.—Respectively from *Una,* District Sorath, and *Dholka,* District Ahmedabad, and two from *Patan,* District Mehsana, the first is important inasmuch as it gives the name and title of the famous noble Zafar Khan Farsi, sometime governor of Gujarat. The second mentions Sharafu'd Din Bahman Zafar Khani as *sarpardadar* ('chief curtain-bearer'). The last two are the earliest records in Persian discovered at Patan so far and mention Amir-i-Miran Hasan and Husain respectively.

FOUR INSCRIPTIONS OF ZAFAR KHAN OF GUJARAT.—Discovered at *Kapadwanj,* District Kaira, *Baroda* and *Patan,* they refer to Zafar Khan, son of Wajihu'l Mulk, who later on assumed sovereignty of Gujarat, and belong to his pre- as well as post-kingship period. One of the former group is dated Ramadan 806 (March A.D. I404), barely a month after the death of Muhammad Shah I; that Zafar Khan did not assume royal titles then (and for some years to come) is further proved by this epigraph. The two inscriptions of his kingship period bear A.H. 8I2 (A.D. I409-I0) and A.H. 8I3 (A.D. I4I0-II) respectively, so that we now have inscriptions relating to every year of his reign.

TWO INSCRIPTIONS FROM MANGROL.—One record, dated A.H. 805 (A.D. I402-03), mentions Malik Shah Badr as ordering the remission of marriage-tax then levied on a particular community. The second one casually mentions prince Fath Khan's expedition to Qala-i-Girnar during the reign of Sultan Ahmad I and his order for the removal of a certain duty imposed by local authorities.

INSCRIPTIONS FROM JUNAGARH.—One of the records, belonging to Mahmud I Begda, mentions the conquest of the Girnar fort (also called here Mustafabad) and the construction of the Jami mosque, by which is probably meant the one in Uparkot. Two small epigraphs, not noticed so far, mention Hindu sculptors who were responsible for the execution of the elaborately-carved central prayer-niche and the carving of the inscriptional tablet (another new inscription of Muzaffar II) and were awarded some land as a gift for the work.

LATER MUGHUL INSCRIPTIONS.—An inscription from *Patan,* District Mehsana.. mentions Nawwab Mahabat Khan's encounter with Duda Koli, a turbulent chief.

4. PRESERVATION OF MONUMENTS

A. MONUMENTS OF NATIONAL IMPORTANCE

NORTH-WESTERN CIRCLE

Delhi

TOMB OF ABDUR RAHIM KHAN-I-KHANAN, NEW DELHI.—The tomb of Abdur Rahim Khan-i-Khanan, the son of Bairam Khan, prime minister of Akbar, and a notable luminary in Hindi literature, had been extensively stripped, at the time of Safdarjang, of a large number of veneer-stones of marble and sandstone for the decoration of the latter's tomb. To arrest the further decay of the floors oh the terrace and inside and to make the tomb structurally sound, urgent structural repairs, such as grouting the cracks and holes and pointing the joints in masonry, were initiated.

TOMB OF GHIYASU'D DIN TUGHLUQ, TUGHLAKABAD.—The roof of this unique citadel-tomb had been leaking. The affected parts were thoroughly grouted with cement and sand-mortar and the roof re-laid with lime-cement concrete.

SULTAN GHARI, MALAKPUR KOHI.—Minor damages caused by miscreants some time back to this tomb, one of the earliest Islamic tombs in India, were made good, the grave-platforms inside the crypt were repaired, and the floor in the courtyard was restored at places.

KOTLA FIRUZ SHAH, NEW DELHI.—In this monument, which had served as accommodation for the refugees after the Partition, special repairs had been going on. In the current year the gaps in the southern wall were closed and the gaping open joints in the masonry grouted.

ADILABAD CAUSEWAY, TUGHLAKABAD.—The decayed parts of this Tughluq monument received consolidation. A water-channel with a flanking arched recess was discovered during clearance.

Uttar Pradesh

EXCAVATED ASVAMEDHA SITES NEAR KALSI, DISTRICT DEHRA DUN.— Two of the *asvamedha*-altars excavated in I953-54 were consolidated with cement, sand and mortar in the same form in which they had been excavated, so that the bricks did not get dislodged nor the mud-core washed away.

Panjab

MONUMENTS IN KANGRA DISTRICT.—The outstanding works consisted of repairs and grouting to the rubble masonry of the inner citadel-wall and underpinning of the over-

hanging masonry in the *hammam* in *Kangra fort;* grouting of the joints in the *Baijnath temple;* grouting at the *rock-cut temples at Masur;* and provision of lightning-conductors to the *Basheswar Mahadeva temple at Bajaura, Gauri Sankar temple at Naggar* and the *temple at Dasal.*

PEPSU

PINJORE MONUMENTS, DISTRICT KANDAGHAT.—Large-scale repairs to these monuments included the resetting of several sections of the *compound-walls* and of broken *chhajjas* in the ***Rang Mahal*** and watertightening of its roof and plastering of the walls of the ***main gateway***.

Rajasthan

EXCAVATED REMAINS AT RANG MAHAL, DISTRICT GANGANAGAR.—The excavated trench at this early historical site was provided with barbed-wire fencing, and proper arrangements were made for the drainage of rain-water from the excavated area.

NORTHERN CIRCLE

Uttar Pradesh

TAJ MAHAL, AGRA.—The important works undertaken at the Taj Mahal were repairs to the facades of the mausoleum and the *chhatri* at the south-east corner of the enclosure-wall near the Gausala and the replastering of the inner surface of the upper dome as recommended by the Taj Advisory Committee and of the plinth of the *dalans* in the forecourt.

FORT AT AGRA.—Four marble brackets supporting the *chhajja-stones* of the *Diwan-i-Khas,* which had sagged, were dismantled and reset in special lime-mortar after the brackets had been secured with strong clamps.

MONUMENTS AT FATEHPUR SIKRI, DISTRICT AGRA.—The work of repairing the inner facing of the *city-walls,* taken up last year, was continued this year. Two patches of walls, measuring 26 ft. and 38 ft., were rebuilt during the year. In the *Dargah of Sheikh Salim Chishti,* twentyfive more tie-rods, each 40 ft. long, were fixed on the roof to bind the parapets after drilling holes through the facing stones and *chhajja-stones.* The broken and decayed stones were replaced by new ones. A start was made to restore the missing pieces of mother-of-pearl on the baldachin over the grave of Sheikh Salim Chishti (pl. LI). Along with this, resetting loose inlay-pieces and substituting the missing ones in the plinth were also taken in hand. The marble facing stones that had fractured due to the rusting of iron clamps and dowels are being chiselled off, and new marble *bidis* (patch-work) are being inserted.

MONUMENTS AT KHUSROBAGH, ALLAHABAD.—At the *tomb of* ***Bibi Tambolan*** some important work was carried out, such as the provision of *dasa* stones with a foundation of *lakhauri* brick in lime over a lime-concrete bed all round the platform of the tomb and the

replacement by new ones of broken, missing and decayed stones in its stone pavement. The wide joints and cracks in the main arch, the spandril and the facade on the south side of the *southern gateway* were grouted, while ordinary joints were treated with recessed lime-pointing. The southern facade together with the bastions of the gate, was re-plastered after the removal of old and decayed plaster. The broken stone lotus over the south-east turret of the gate was repaired.

EXCAVATED REMAINS AT KAUSAMBI, DISTRICT ALLAHABAD.—Important works of conservation undertaken at the excavated remains at the Ghoshitarama site included the dismantling of the topmost courses of the walls and their resetting in cement and sand to make them watertight. The wall-tops were covered with sifted earth.

Rajasthan

DEEG PALACES, DISTRICT BHARATPUR.—Though these monuments were taken over in 1953, their complete control has not so far been transferred to the Department. The immediate necessity was to attend to the entrances which had been without gates. Of the three such entrances, two were provided with collapsible gates. Besides, the work of extracting iron rings, which had been abundantly used all over under the brackets *of chhajja*-stones and elsewhere and have been responsible for considerable damage, is continuing.

Vindhya Pradesh

TEMPLES AT KHAJURAHO, DISTRICT CHHATARPUR.—The work of pointing and grouting all over the temple-fa9ade and the spires of the *Kandariya temple*, together with the replacement of the brickwork and lime-patches, inserted about a hundred years back, by stones of the original design was taken up and is progressing satisfactorily.

MID-EASTERN CIRCLE

Bihar

EXCAVATED REMAINS AT NALANDA, DISTRICT PATNA.—Numerous salt-eaten patches of brickwork were repaired, and the area west of the *Site no. 3* was made tidy. Decayed lime-concrete at *Site no. 9* was replaced, and extensive improvements were carried out to the main approach-road and to the pathways all over the site.

EXCAVATED REMAINS AT KUMRAHAR, PATNA.—The site was cleared of rank vegetation-growth.

BARABAR CAVES. DISTRICT GAYA.—A good approach to the site was provided in addition to repairs to the masonry and rock-cut steps to the caves.

MONUMENTS AT RAJGIR, DISTRICT PATNA.—Breaches in the ancient *fortification-wall* near the Banganga were repaired (pl. LII), and the masonry of the northern wall of the *New Fort* was conserved. The frontage of the *Sonbhandar caves* was also improved by the levelling up of the untidy area.

FORT AT ROHTAS, DISTRICT SHAHABAD.—The terraced roofs of the sixteenth-century palaces in the fort had become spongy and leaky, Reterracing was done to the roofs of the *Elephant Gate, Maids' Quarters* and the building near *Phul Mahal.* Similarly, the damaged or sunken floors and aprons were renewed and repairs to the platform near the Darbar hall done in addition to other petty items of work.

SHAH MAKHDUM DAULAT'S TOMB, MANER, DISTRICT PATNA.—The important work here consisted of taking out decayed stone panels and replacing them by new ones of the same design as original ones.

Uttar Pradesh

EXCAVATED REMAINS AT SARNATH, DISTRICT BANARAS.—The network of pathways at this important excavated site was considerably improved and the area near the main approach levelled and dressed up after the removal of the high dump of spoil-earth blocking the site from view from the roadside. Further, the tops of walls of the *Main Shrine* and the *Dharmarajika Stupa* were made watertight. The *Chaukhandi Stupa* was provided with barbed-wire fencing.

DHARARA MOSQUE, BANARAS.—The most important problem of conservation at Banaras is the one relating to the surviving *minar* of the mosque built by Aurangzeb in I670. Out of the two original *minars,* one collapsed in I949, and the existing one was observed to be out of plumb and thus apprehended to be a possible source of danger to the people of the locality. The Government of India therefore appointed an expert committee to suggest measures for its proper preservation. Necessary steps are being taken to implement the recommendations of this committee.

EXCAVATED REMAINS AT KASIA, DISTRICT DEORIA—At the *Ramabhar Stupa* the main work consisted of the extensive clearance of jungle and vegetation. At the site called *Matha Kuar-ka Kot* the salt-eaten fabric of the main *stupa* and the monasteries was underpinned and the approaches improved after levelling up the site.

EASTERN CIRCLE

West Bengal

EXCAVATED SITE AT BANGARH, DISTRICT WEST DINAJPUR.—The wall-tops were made watertight, and earth-filling, including dressing and levelling in the ditches of the exposed site, was effected for drainage.

BAISGAZI WALL, GAUR, DISTRICT MALDA.—The fallen portions of this huge wall, enclosing the mound of a palace built in the middle of the fifteenth century, were rebuilt with Gaur bricks and trees that had taken roots in the structure removed.

Orissa

SUN-TEMPLE, KONARAK, DISTRICT PURI.—This famous temple has been undergoing special repairs since I952-53 in pursuance of the recommendations of the Konarak Temple Committee. During this year attention was concentrated on the clearance of

sand from the compound. The work of the rectification of slopes by chiselling the stones on the first and second terraces of the *jagmohan* was also completed. Rusted-out iron clamps were removed and replaced by copper ones.

The Committee, in one of its recommendations dealing with the question of humidity in the sand-filling inside the *jagmohan,* suggested that, in order to improve the ventilation of the interior, vents on each of the four sides, each of the size of 3 ft. square, should be connected at different levels and doors provided outside to prevent the ingress of moist air during monsoon. An attempt was made to implement this suggestion: to start with, a vent on the east side was opened and carried out to a depth of 20 ft. into the core; but as difficulty was encountered in removing from inside the boulders which had been used in filling the work had to be suspended pending a further study of the question.

The joints of the first and second terraces of the *jagmohan* were raked out as a preliminary to the work of watertightening by pointing and grouting.

The question of using ironite as a waterproofing medium has been receiving attention. As an experimental measure four samples of terracing were laid out using different proportions of ironite, and their effect is under observation. The proportion found most suitable will be finally adopted.

CHAUSATH YOGINI TEMPLE, HIRAPUR, DISTRICT PURL—This recently-protected temple, one of the few Chausath Yogini temples found in India, was conserved. The walls, which had been out of plumb and in danger of collapse, were reconstructed in the old style using new stones only wherever necessary.

MUKTESVARA TEMPLE, BHUVANESWAR, DISTRICT PURI.—The cracks in the unique *torana* in the courtyard of this ninth-century temple, one of the best examples of Orissan architecture, were grouted.

Assam

SIBDOL TEMPLE, SIBSAGAR.—The main work in Assam was at the Sibdol temple at Sibsagar, built by Rani Ambika in I734, the fabric of which had been badly shaken by the earthquake of I950. During this year the missing *amalakas* of the main temple and the *mandapa* were rebuilt in brick in their original style. It was also possible to repair locally the golden pinnacle which had fallen down from the top of the *sikhara* and had been lying so long unattended to for want of skilled craftsmen. The damaged portions were made good by careful beating, joining with copper rivets and fixing a copper-sheet lining in patches on its inner side. It was then polished and lifted to its original position at a height of I20 ft. by means of a special scaffolding and a crab-winch. The loose masonry of the damaged facade was completely dismantled and renewed with new stones of the required size quarried at Kohima (pl. LIII). Proper bond with the firm core behind was provided by means of copper clamps embedded in cement-concrete. On the west facade none of the image-blocks or pillars was in good condition; they had therefore to be replaced by new ones in such a way that the original style was not lost. In the south-west corner some of the images found in a good condition were carefully dismantled and reset in their original position.

SOUTH-EASTERN CIRCLE

Andhra

VIRABHADRASVAMI TEMPLE, LEPAKSHI, DISTRICT ANANTAPUR.—The conservation effected in this temple included making the threshold even by providing new stones and repairing the damaged lime-concrete floor in the circumambulatory path in the *garbhagriha.*

MONOLITHIC BASAVANNA, LEPAKSHI.—The work of constructing a 4-ft. high compound-wall round the monolithic bull in neat cut-stone masonry of proportions in keeping with the gigantic statue of the Nandi in place of the old dilapidated wall was taken up.

FORT AT GOOTY, DISTRICT ANANTAPUR.—The fallen side-walls of the flanking verandahs of the gateways were reconstructed, and the bastions were replastered to stop the rain-water running into the core of the fort-wall.

ATTIRALA PARASURAMA TEMPLE, POLI, DISTRICT CUDDAPAH.—The work included the reconstruction of the cut-stone masonry of the rear-walls, levelling of the site and provision of gravelled approaches to the temple.

FORT AT SIDDHAVATTAM, DISTRICT CUDDAPAH.—The work done at the Sidhout fort consisted of the construction of parapet-walls of the culvert' in front of the main gateway, levelling of the ground, gravelling of the approaches and waterproofing of the roof of the terrace of the second closed gateway.

INSCRIBED PILLAR, IPURU, DISTRICT GUNTUR.—The window-frames, which had been eaten away by white-ants, were replaced and the walls re-plastered.

BUDDHIST REMAINS AT RAMATIRTHAM, DISTRICT VISAKHAPATNAM.—The monument comprises a number of *chaityagrihas,* monastic cells, etc., constructed on three ledges running along the face of a hill about 800 ft. in height, with a dilapidated retaining wall on the lower side. The reconstruction of the retaining wall and the clearance of debris were the main work here.

Hyderabad

GOLCONDA FORT, DISTRICT HYDERABAD.—Pathways were laid out and gravelled with sufficient provision for side- and cross-drainage. The front yard of the fort (pl. LIV) was levelled in terraces, and slopes were revetted with dry-stone packing. Many of the disturbed steps were reset in position. The tops of the walls and structures were water-tightened with rubble stones in lime-mortar mixed with cement. The metal spouts on the roof of the main gate were replaced by well-dressed stone ones. Leading drains were formed at 'the top of the terrace to avoid the dripping of rain-water along the face of the walls. The loose joints in Ramadas Kota passage by the side of the Tarmati mosque and the Akkanna Madanna were pointed with lime-mortar with a small quantity of cement. The walls in Shahi Mahals and Akkanna Madanna were underpinned.

CHAR MINAR, HYDERABAD.—The top plaster of the leaky roof of the monument

was removed to a depth of 1½ in., since it had developed cracks and the mortar had disintegrated. The cracks were cleaned, and fresh cement-mortar was injected into them. The drainage-outlets were opened and their joints watertightened and grouted in cement-mortar.

THOUSAND-PILLARED TEMPLE, HANAMKONDA, DISTRICT WARANGAL.—The front *mandapa* of this twelfth-century temple, with its pillars and plan in the shape of a lotus, is in a very dilapidated condition with a sunk outer periphery. A huge masonry platform, a later accretion, was removed to expose the original base of the *mandapa.* The gaps between the jambs of the doorways and the walls, in the facing stones of the main walls and in the walls of the eastern gateway were bonded with masonry in lime-mortar mixed with cement. The top of the *sarai,* a detached structure in the north-west corner of the temple-compound, was relaid with surkhi-concrete and watertightened.

FORT AT WARANGAL.—This fort, the seat of the Kakatiya dynasty of the tenth to the thirteenth centuries, contains an outer fortification pierced with gateways at the four cardinal points, an inner fortification, mostly of masonry, with similar gateways and several temples. A five-year programme to execute extensive repairs to the monument has been drawn up. This year, five temples were exposed by the removal of the accumulated debris from their base and surroundings. One of the temples, called Jangamayagudi, within the fort, which had been lying in a dilapidated condition due to gaps formed in the walls enclosing the *sanctum,* was taken up for repairs : the gaps were filled, and the top of the roofing over the *antarala* was watertightened.

Madhya Pradesh

MARKANDA RISHI TEMPLE, MARKANDA, DISTRICT CHANDA.—The side-walls of the *sabha-mandapa* of the temple had been out of plumb and standing in a precarious condition. The stones of the walls were removed after numbering and rebuilt to plumb and level. A length of about 70 ft. of the compound-wall on the south side was rebuilt with old material, following the original model.

VISHNU TEMPLE, JANJGIR, DISTRICT BILASPUR.—The plasters of the pediment had tilted in the absence of any roof over it. The stones were re-adjusted and the joints closed. The vertical gaps in the jambs were filled up by grouting. The dampness in the cellar due to the percolation of rain-water was arrested. Besides, the walls over the false roof were pointed and the doors coloured with paint.

SOUTHERN CIRCLE

Madras

FORT ST. GEORGE, MADRAS.—The walls with ornamental dado and mouldings and the coffered ceiling of the Long Hall, serving as the 'Exchange' in the early East India Company days, was suitably painted to form a matching background to exhibits displayed therein.

SHORE TEMPLE, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The dry-stone revetment-

walls on the foreshore of the temple were pointed to prevent seepage of sea-water. The work of reinforcement of the groyne-wall in front of the temple was completed by the State Public Works Department.

MONUMENTS AT GINGEE, DISTRICT SOUTH ARCOT.—The *kalyanamandapa* in the *Lower Forty* the main part of which rises to seven storeys, revealed, on excavation of the enclosed open courtyard in the middle, the existence of a stepped tank with a central pavilion and elaborate arrangements for the inlet and outlet of water. In addition to the clearance of this tank, the flat leaky roof of the surrounding cloister was thoroughly watertightened. The *Chettikulam,* a large tank with enormous masonry steps on two of its sides, was taken up for repairs. The dislodged steps were reset, and a strong abutment was built up on the outside. The loose layers over the terrace of the *Rajagiri audience-chamber* were removed and the top relaid and plastered to render the monument watertight. Similar work was carried out at the top of the *kalyanamandapa* in the *Krishnagiri fort.*

BRIHADISVARA TEMPLE, TANJORE.—In continuation of the work done on the main *vimana* in previous years, the *mahamandapa* and *mukhamandapa,* both of them closed structures, were rendered bat-roof.

BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHIRAPALLI.—The stone *vimana* of the temple was watertightened. The open courtyard around the main structure, littered with heaps of abandoned stone and debris of the last century, was completely cleared (pl. LV). As a result of clearance and further excavation, undertaken in order to reduce the surrounding ground to the original Chola level and restore the old drainage-arrangement, the remnants of the cloister (pl. LVI) and sub-shrines, running round the inside of the compound-wall, and the plinth of an independent temple to the south of the main shrine were exposed to view, thereby making it possible to visualize the original plan of the entire temple-complex. The exposed structures were suitably conserved and the original drainage-system revived.

FORT VELLORE, DISTRICT NORTH ARCOT.—The linear and transverse cracks in the brickwork battlements of the stone fort-wall were grouted and watertightened.

JAINA CAVE-TEMPLE, TIRUMALAI, DISTRICT NORTH ARCOT.—This cave-temple is partly a natural cavern and partly a brickwork structure. As the roof of the structural part had become leaky, spelling harm to the paintings inside, it was made thoroughly waterproof.

KARUPPANNASWAMI ROCK WITH SCULPTURES, UTTAMAPALAIYAM, DISTRICT MADU-RAI.—The frieze of Jaina sculptures with accompanying inscriptions in Vatteluttu had to be protected against the damages of sun and rain by the provision of a *chhajja-roof* supported on pillars over a masonry parapet-wall in front of the deep turn below.

JAINA STATUE OF GOMMATESVARA, KARKAL, DISTRICT SOUTH KANARA.—The roof *of the mahadvara* in front of the statue of Gommatesvara was repaired by the restoration of the original arrangement of stone roof-structure, peculiar to the heavy-monsoon area of the west coast, after divesting it of later accretions in the form of repairs.

Mysore

ANANTASAYANAGUDI, HOSPET, DISTRICT BELLARY.—An approach to the eastern *gopuram* was provided after the acquisition of the intervening land and eviction of the houses and hutments thereon. The process of the clearance of encroachments, which had been in progress for the past nine years, is now complete. The uneven earthen floor of the large *mukhatnandapa* in front of the shrine was levelled and finished in concrete.

RUINS AT HAMPI, DISTRICT BELLARY.—The ground round the *Lotus Mahal* and other structures inside the *Zenana Enclosure* was cleared and levelled, preliminary to the laying of patches of turf and flower-beds wherever desirable.

TEMPLES AT HALEBID, DISTRICT HASSAN.—The twin temple of Hoysalesvara and San-talesvara, one of the most outstanding Hoysala monuments, had its entire leaky roof dismantled and relaid. The area round the temple was also cleared of vegetation and the undulating ground levelled. The scattered sculptures and carved stones were sorted out with a view to exhibiting them in a proposed sculpture-shed.

TEMPLES AT MOSALE, DISTRICT HASSAN.—A large gaping hole, resulting from the loss of a roof-slab, over the *navaranga* in the Nagesvara temple was closed up and the terrace relaid. In the adjoining Chennakesava temple, similar watertighten-ing of the roof of the *navaranga* and the superstructure of the *vimana,* including the resetting of the dislodged *mahapadma* and *kalasa* components, were carried out.

TIPU SULTAN'S PALACE, BANGALORE.—The essential repairs to this monument consisted of relaying and watertightening the entire roof of the first floor and repairs to the skylights in order to safeguard the remnants of the painting and the old timberwork inside.

VIRA NARAYANA TEMPLE, BELAVADI, DISTRICT CHIKMAGALUR.—The two large holes over the roof of the *navaranga,* resulting from the breakage of the soapstone covering slabs, were closed up and the entire terrace of the *navaranga* repaired, after the removal of earth, and loose plaster which had been put up in earlier times by way of repairs. The three *vimanas* of the temple were also watertightened. Similar roof-repairs were done over the *upparige* corresponding to the *mahadvara* of the temple.

VIDYASANKARA TEMPLE, SRINGERI, DISTRICT CHIKMAGALUR.—This stone temple, located in a region of very heavy rainfall, had a leaky roof, worsened by the entirely porous and soaked condition of the brick-and-mortar roof laid over the original stone roof consisting of a system of channel and hood-stone suited to monuments in that area. The second roof was entirely removed, the dislodged channels and hoods reset in position and cracks and openings grouted, thus restoring the original arrangement with very good effect. The watertightening operation was also extended to the various tiers of the *vimana* superstructure. The interior of the hollow *vimana* and *sukhanasi* was cleared of debris and loose stones, the floors warertightened and the original drainage inside them restored to a working condition.

Travancore-Cochin

ST. FRANCIS CHURCH, COCHIN.—The exposed doors and windows of this, the oldest European church in India, were painted as a protection against rain and corrosive sea-air. The blistered surface of the walls inside, caused by efflorescence and proximity to the sea, was cleaned and the interior distempered.

MATTANCHERY PALACE, DISTRICT TRICHUR.—The attic over the painted walls of the chambers, with accumulated dust and debris, was cleared to prevent the infiltration of dust etc., harmful to the paintings that are being preserved. To minimize the corrosion and damage, the woodwork of the windows and doors was repainted.

Former French Settlements

The protected and other monuments in Pondicherry, Karaikal and Mahe were inspected and proposals formulated for their maintenance and protection as necessary.

SOUTH-WESTERN CIRCLE

Hyderabad

AJANTA CAVES, DISTRICT AURANGABAD.—With the construction of the tail-end of drain 5, the programme of provision of surface-drains at the top of the caves, as recommended in I948 by the Ajanta Committee, was completed. All decomposed and spongy earth along with loose boulders and disintegrated portions of the rock above caves I5 to I7 was removed for determining the source of leakage and filling up the cracks. In caves 6,I4 and I5 the missing door-jambs of cells and pillars were repaired in reinforced concrete to match the adjacent rock-surface. The vertically-cracked pillars in cave 23 were secured with flat iron bands embedded in cement. Expanded-metal door-frames and other fixtures were provided at some of the cells flanking the front verandahs of the caves. Portions of a few sculptures were carefully and artistically mended.

ELLORA CAVES, DISTRICT AURANGABAD.—The bases of pillars and the floors in some of the caves were improved. The spongy portions were scraped off -and the surface finished in reinforced concrete to match the original. Pot-holes were filled in cave II The retaining wall at the top of cave 16 was treated with recessed cement-painting. In addition, the drainage and the approaches were much improved. A concrete path was laid out in front of caves I to 6. The disintegrated door-jambs were restored in one of the caves. All woodwork and pipe-railings were painted to the tint of the rock.

PITALKHORA CAVES, DISTRICT AURANGABAD.—The caves, which had been blocked up with boulders and debris, were cleared. The fallen and collapsed parts of the rock lying in front were removed and the area levelled up. .

BIBI-KA-MAQBARA, AURANGABAD.—This beautiful tomb, enshrining the remains of Aurangzeb's queen, was repaired by re-laying in cement-concrete the cracked and leaking terraces of the northern *baradari* and the mosque. The flaking lime-plaster on the buttresses was renewed, and the honeycomb brickwork flanking the approaches to the main tomb was replaced in patches.

CAVES-AT AURANGABAD.—The foremost problem here was the provision of surface-drains to stop water dripping along the facades of the caves. Some of the loose boulders were removed and open cracks partly filled. In addition, steps were provided and a parapet-wall constructed as a measure of safety.

MONUMENTS AT GULBARGA.—Approaches to the *Haft Gumbad* and the *mosque* in the fort were improved.

Bombay

ELEPHANTA CAVES, DISTRICT KOLABA.—For the last few years leakage had been recorded in many parts of cave I. A close examination of the, problem revealed that the gunite-layer spread on the top of the cave in I940 had become ineffective. It was, therefore, removed under expert advice. The retaining walls flanking the courtyard in front of cave I were constructed in rubble-masonry to hold back the falling sides.

KONDAVITE CAVES, DISTRICT BOMBAY SUBURBAN.—These caves, long neglected owing to the difficulty of access, were attended to this year. The missing portions of the columns, jambs and steps were restored in reinforced concrete matching the original colour. Other works included cement-concrete flooring to some of the caves.

JOGESHWARI CAVE, BOMBAY.—This Brahmanical cave is in an advanced stage of disintegration, and not much can be done to save it. To divert rain-water from entering the courtyard of the cave, a rubble-masonry wall was constructed at its top.

PORTUGUESE FORT, BASSEIN, DISTRICT THANA.—The south-west bastion was repaired by watertightening the tops and renewing the masonry for steps, side-walls, etc. The open joints were pointed in lime-mortar at places where the mortar had fallen as. a result of decay.

PANDULENA CAVES, PATHARDI, DISTRICT NASIK.—The tops of the leaking caves were thoroughly examined and cement-concrete laid on the affected area. The missing pillars in caves 4, I2 and I4 were restored in reinforced concrete to match the original. To avoid the scouring action of rain-water pre-cast gutters were provided.

FARAH BAGH PALACE, AHMEDNAGAR.—This monument is in a dilapidated condition and requires large-scale conservation-measures. Initially, however, the peeled-off lime-plaster was edged to arrest further flaking, and the open joints in the plinth were pointed with lime-mortar. At places patchwork filling was done in lime-mortar at the hollowed portions of the floor. All ancient woodwork was treated against rot with a preservative.

BHAJA CAVES, DISTRICT POONA.—The disintegrated portions of the cave-surfaces, including the floor, were renewed in reinforced concrete. Steps were provided for easy access. The leaking roof over the fourteen *stupas* was made watertight by a coat of tarloid and by the deepening of the catchwater drain on the hill-slope.

KARLA CAVES, DISTRICT POONA.—The missing portions of the partition-walls of the cells in some of the caves were renewed in reinforced concrete to match the original. A kerb-wall and iron railings were provided for the water-cisterns.

MONUMENTS AT JUNNAR, DISTRICT POONA.—The three groups of caves, viz. *Manmodi, Ganesa Lena* and *Tulja Lena,* and the *Shivneri* fort, received attention, and necessary repairs, like the pointing of open joints and clearance of debris and vegetation etc., were carried out.

ASAR MAHAL, BIJAPUR.—This monument, originally built to serve as a palace of justice in I646, contains paintings in some of its rooms. As it was desirable to save them from any damage, the profusely-leaking roof of the hall with a wooden ceiling was attended to by the filling of the cracks on the terrace and the making of the roof waterproof. The worn-out portions of the wooden beams were strengthened by the fixing of flat-iron braces along the row of joints.

KAMAL BASTI TEMPLE, BELGAUM.—As a safeguard against any settling of foundations, cement-concrete, 4 in. thick and 5 ft. wide, was provided all round the temple.

WESTERN CIRCLE

Rajasthan

CHITOR FORT, DISTRICT CHITORGARH.—Large-scale work continued at the monuments situated within the fort. The fallen facade of *Navlakha Bhandar* was replaced by a concrete roof. The enormous *inner fortification-wall,* as thick as I8 ft., constructed by Banbir, was underpinned at places and consolidated as a whole. *Sringar Chanri,* a Jaina temple, can now be viewed from all the sides, since even the sides covered by Banbir's wall were exposed this year (pl. LVII). The door-frame, which had gone out of plumb, was reset in position. In the course of clearing the debris in *Rana Kumbha's palace* (pls. LVIII and LIX) several interesting structural details were brought to light: a hitherto-unknown main entrance by the side of the Diwan-i-Am, leading to the Suraj Gokhara, was discovered; it was also noticed that the palace proper stood on a series of vaults with groined arches, which must have been in use, for one of them contained an image of Gajalakshmi in a niche. The overhanging dome on the palace was taken up for repairs. The fallen wall on the eastern side is being rebuilt in accordance with its original technique to a sufficient height, so that if can support the damaged dome. The stumps of walls brought to light after clearance were raised in height so as to show the alignment and the lay-out of the apartments in *Zanana Mahal.* The flooring of the temple, popularly known as *Mira Bat's temple,* was repaired. *Mira Bai's palace* received attention by way of watertightening the tops of walls and filling up cracks. At important monuments boards giving their short history and special features were put up and the approach-roads repaired.

Bombay

BABA LAULI'S MOSQUE, AHMEDABAD.—During the heavy flood of I950 the north-west portion of this fifteenth-century mosque had been washed away, and it became necessary to reconstruct the portion to save it from further damage. While the foundations were being exposed, it was noticed that the crosswalls between the pillars and the outer walls had a foundation less deep than the main walls. In order to add to their strength the

shallow foundations were deepened to a uniform depth. The plinth-walls were then raised in ashlar masonry with a core of brickwork inside.

BRICK MINARS, CHAMPANER, DISTRICT PANCH MAHALS.—The two brick *minors* were underpinned and the walls rendered watertight.

Saurashtra

ROCK-CUT CAVES, TALAJA, DISTRICT GOHILWAD.—Some of the caves were cleared of the enormous mass of debris lying on their floors and restored to their original levels.

ROCK-CUT CAVES, JUNAGARH.—These caves, locally known as Bava Pyara, were similarly cleared of accumulations.

ASOKAN ROCK-EDICT, JUNAGARH.—The openings in the roof of the structure over the inscription were covered with glass-panes.

CENTRAL CIRCLE

Bhopal

RAISEN FORT.—The shell-wall of the rallen *Ratnavali Burj* was restored to a height of 20 ft. with coursed rubble-masonry in lime-mortar over a foundation rebuilt solidly in cement-mortar. Care was taken to maintain the original batter and offsets and to leave weepholes at suitable intervals. Other works included the improvement of the steps of the *Bhopal gate;* resetting of the slided masonry of the *Dhobi tank* and *Rani Tal;* and extensive clearance of vegetation and silt and repairs to the masonry steps of the *Madagan tank.*

Madhya Bharat

MONUMENTS AT MANDU, DISTRICT DHAR.—Mandu was taken up for large-scale repairs, including extensive jungle-clearance, upkeep of the approach-roads and underpinning of decayed walls. Dry-stone compound-walls were constructed around *Gada Shah's palace* and the *royal palaces* near Champa Baodi, and to the west of the *dharmasala* attached to *Hoshang Shah's tcmb.* Mural paintings in Gada Shah's palace were protected by the erection of screen-walls in keeping with the old design. The side-walls of the *reservoir attached to Jahaz Mahal* were pointed and made watertight, and its sluice-valve and steps were repaired. The retaining walls in front of *Taveli Mahal* were extensively underpinned and partly restored, and the existing garden was further developed. The decayed leaking terrace over the underground *palaces* near Champa Baodi was reconcreted, and as a temporary measure masonry pillars were erected to support the vaults of the underground chambers. The cleaning of moss and lichen from the marble facade of Hoshang Shah's tomb was continued, while fresh work was started on the repairs of the leaking terrace of the *Jami mosque* by renewing the lime-concrete in strips and patches.

MONUMENTS AT GWALIOR.—The *tomb of Muhammad Ghaus* was enclosed with barbed-wire fencing with a view to growing lawns and flower-beds in its compound,

hitherto kept untidy. Voids in the plinth were filled with lime-concrete in *Teli-ka-Mandir* in Gwalior fort, cracked lintels were supported with masonry pillars in the out-houses of *Mansingh's palace,* and extensive debris was cleared from the precincts of the *Jaina colossi.*

TOMB OF ABU'L FAZL, ANTRI, DISTRICT GWALIOR.—The repairs of this neglected tomb were attended to, and a trilingual historical notice giving the life-history of Abu'l Fazl was put up.

Madhya Pradesh

BHONSLA NAGARKHANA, NAGPUR.—The decayed concrete of the terrace was replaced by new lime-concrete, and the stone masonry was underpinned at places.

HAWAKHANA BASTION, AKOLA.—The south-east bastion, which had fallen down some years ago endangering the safety of the Hawakhana and the adjoining walls, was restored from its foundation to a height of 6 ft. and its core filled up.

TOMB OF SHAH SHUJA AT BURHANPUR, DISTRICT NIMAR.—The shattered portions of the plinth of the tomb were rebuilt to match its original ornate design.

GAWILGARH FORT, CHIKALDA, DISTRICT AMRAOTI.—Besides extensive jungle-clearance the stepped path was improved, and the collapsed masonry of the room attached to the second gate was restored.

RAHATGARH FORT, DISTRICT SAGAR.—The exposed tops of walls were made water-tight, cracks in the terrace filled, and broken ends of plaster edged off at the *Moti Mahal.*

GARHPAHRA FORT, DISTRICT SAGAR.—A damaged pillar was grouted with liquid lime and broken ends of plaster edged off at the *Shish Mahal.* In addition, vegetation growing near the monuments was cleaned, and loose steps leading to the hill were reset with cement-mortar.

B. STATE-MAINTAINED MONUMENTS

HYDERABAD STATE[1]

Apart from the usual maintenance and upkeep of the monuments, the following special works carried out during the year deserve mention : (I) clearance and repairs to *Uchappa Mutt,* Anegundi, District Raichur, and erection of four masonry pillars for supporting the old roof; (2) clearance of vegetation from the *main temple,* Ghanpur, District Warangal, and its twentyfour subsidiary shrines; (3) petty repairs and clearance of vegetation from the old *Kakatiya Saivite temples* at Pangal, District Nalgonda; (4) putting up of boundary-stones round the *prehistoric sites* in District Nalgonda; (5) general clearance and maintenance of monuments at Hyderabad and Golconda; (6) general clearance and maintenance of the fortifications and old buildings inside the *fort* at Kalyani, District Bidar, and construction of foot-paths to archaeological sites in the locality; (7) clearance of vegetation from the *Siva temple* at Naravanpur, District Bidar;

[1] Information from the Director of Archaeology, Hyderabad State.

(8) removal of rank vegetation from the *fort-walls* at Devarkonda, District Nalgonda, and repairs to steps leading to the citadel; and (9) clearance of rank vegetation and debris and construction of drains and platform round the *monolithic pillar* at Charthana, District Parbhani.

MADHYA BHARAT STATE[1]

Minor repairs were carried out at the *chhatri of the Rani of Jhansi* at Gwalior. The platform representing the main memorial of the Rani was treated with *doga* wash, the iron railing on all four sides was repainted with black varnish, and *bajri* was spread on the approach-avenues. The rugged and broken surface of the floors inside the *Gujari Mahal* at Gwalior was repaired with cement and *bajri*.

MYSORE STATE[2]

The work of reconstruction of the Mahadvara tower of the *Ranganathasvami temple* at Magadi made considerable progress and' is likely to be completed in the near future. A few important citizens of Saligrama and Chik-Hanasoge have formed a committee with the object of making arrangements for the renovation of the *Adinatha Basti* at Chikhana-soge, an eleventh-century monument. Urgent repairs to the *Madhavarayasvami temple* Belur, *Kesava temple,* Ambuga, and *Venkataramanasvami temple,* Bangalore City, were completed. The *Bhaktavatsala shrine,* Belgola, Srirangapatna taluk, the only monument in the State with a circular plan, is in a highly dilapidated condition, and it is necessary to arrange for its preservation. As a first step towards the preservation of the mural paintings in the State, photographic records were made of the best-preserved portions of the ceiling-paintings in the *Narasimhasvami temple,* Sibi, and *Tirumallesvara temple* Hiriyur.

RAJASTHAN STATE[3]

Conservation was done at *the old- temples and monuments* at Mandore, Osian, Kiradu, Bhundana and Buchkula, Jodhpur; *the palaces and chhatris* at Amber and *Some-svara temple* at Bhangarh, Jaipur, and the *Bhandadewara,* Kotah.

SAURASHTRA STATE[4]

The following monuments received attention:—

UPARKOT, JUNAGADH.—This fort was famous in the annals of Rajput kings of the medieval period of Sorath and encloses a variety of architectural edifices, such as gateways, a palace converted into a mosque, step-wells, rock-cut wells, caves, etc. At the *Jama Masjid,* originally Ranaka Devi's palace, jungle-cutting and repairs to the balcony, terrace and arches were carried out. Extra support to ten broken lintels and arches and barbed wire-fencing was provided and steps reset. At the *Adi Chadi Vav,* a step-

[1] Information from the Director of Archaeology, Madhya Bharat State

2* Information from the Director of Archaeology, Mysore State

3 Information from the Chief Superintendent of Archaeology and Museums, Rajasthan State.

[4] Information from the Saurashtra Government.

well built by the maid-servants of king Ranavaghan, two fallen walls on the west and south sides were re-erected. At the *Navaghan well,* a rock-cut well having a round passage down to the water-level, the trees all round were removed and cracked walls strengthened. Vegetation covering the fort-wall was removed from the front portion of the fort to a length of 300 ft. and height of 80 ft.

VIKIA VAV, PACHHATAR, DISTRICT HALAR.—The step-well, built by Jethavas of Ghumli probably in the thirteenth century, had been covered with trees and filled up with silt at different levels of its four porches. The vegetation was removed, silt cleared from the porches and the fifth and sixth storeys exposed. The well was re-excavated to the water-level.

Protection notice-boards were provided at twenty monuments.

5. ARCHAEOLOGICAL CHEMISTRY

A. PRESERVATION OF MONUMENTS

LINGARAJA TEMPLE, BHUVANESWAR, DISTRICT PURI.—The four sides of the" *vimana* from the plinth right up to the level of *the jagmohan* were freed of moss and lichen, and the surface thus cleaned was subjected to fungicidal treatment to check algal growth.

MARYAM ZAMANI'S HOUSE, FATEHPUR SIKRI, DISTRICT AGRA.—The darkened varnish obliterating the wail-paintings in Maryam Zamani's house was removed along with age-old accretions, and the painted designs were brought out in their original colours. Colour-photographs of some of the painted panels were prepared.

SUNHERI MAHAL, SIKANDARA, DISTRICT AGRA.—The extensive wall-paintings inside the Sunheri Mahal at Sikandara show extensive flaking, and the details of the designs are invisible over large areas of the painted surface. Chemical treatment of the paintings produced very satisfactory results.

ITIMADU'D-DAULAH, DISTRICT AGRA.—Extensive wall-paintings decorating the walls and ceiling of this monument were taken up for chemical treatment and several panels successfully treated and preserved.

SCULPTURES AT KHAJURAHO, DISTRICT CHHATARPUR.—The fungicidal treatment of the sculptures at Khajuraho with a very dilute solution of zinc silicoflouride produced encouraging results and completely eradicated the algal growth.

BAGH CAVES, DISTRICT DHAR.—The paintings in the caves have undergone extensive decay on account of heavy accretions of smoke, tarry and oily matter and the action of hot gases on the pigments. The painted surface presents a blistered and baked appearance, and large areas are bereft of details of designs on account of the extensive flaking of pigments. As a result of chemical preservation of a number of panels in the verandah of cave 2, it was possible to remove the age-old accretions without affecting the pigments (pl. LX B).

MAIN STUPA AT SANCHI, BHOPAL.—The railing round the Main Stupa was taken up for chemical treatment and was freed of moss and lichen and subjected to fungicidal treatment.

TAMBEKARWADA, BARODA.—As a result of intensive treatment ail the painted panels in a small chamber of this monument were preserved and photographed in black and white as well as in colour (pl. LXI).

KARLA AND BHAJA CAVES, DISTRICT POONA.—The sculptures and inscriptions in the caves at Karla and Bhaja, some of which had been subjected to elaborate chemical treatment in the previous year, were again taken up this year.

CAVES AT BADAMI AND ASAR MAHAL, BIJAPUR,— The sixth-century paintings in the rock-cut caves at Badami and the medieval wall-paintings in Asar Mahal, Bijapur, received elaborate treatment. Most of the fragmentary remains of the paintings at Badami were chemically conserved, and several panels of the paintings in the Bijapur monument were completely treated.

MAHAKALI TEMPLE, CHANDA.—The seventeenth-century wall-paintings inside the temple continued to receive attention (pl. LX A). They were photographically recorded according to plan, and several sketches and drawings of the treated panels were prepared.

AJANTA CAVES, DISTRICT AURANGABAD.—Caves I, 2, *6, 7.* 9, 10, II, 16, 17, 19, 20, 2I, 22 and 26 contain wall-paintings. Out of these, cave II was taken up for initial experimentation. The superficial accretions on the paintings, like dust, dirt, cobwebs, insect-nests, insect-cocoons and insect-wax, were removed mechanically by gentle brushing and through the use of organic solvents. Such accretions as soot, lichen and moss were cleared with rectified spirit containing a few drops of ammonia. The shellac-coating applied previously was removed with rectified spirit. The ceiling of the outer verandah was also cleared of accretions. The shellac-varnish was removed in caves 7, I6 and I7, so as to make the microfilming of the paintings possible.

ELLORA CAVES, DISTRICT. AURANGABAD.—Out of thirtytwo caves, two, viz. I6 and 32, contain paintings. The unnumbered Ganesa Lena group, higher up the hillock, also has some paintings. The ceiling of the Lankesvara in Kailasa (cave I6) is covered over with soot and oil, which have become cemented to the surface. Experiments were done towards their elimination and some paintings brought to light.

CAVES AT AURANGABAD.—Caves 3,4, 6, 7 and 8, out of nine caves, contain paintings. The paintings were cleared of accretions in the usual way. The edges of the paint-film and the painted stuccos were properly secured with thick vinyl acetate solution and suitably tinted plaster of Paris. The painted surface was given a preservative coating of vinyl acetate.

VIRABHADRASVAMI TEMPLE, LEPAKSHI, DISTRICT ANANTAPUR.—Work continued at this monument, and the painted surface was given a preservative coating of vinyl acetate. The edges of the loose paint-film were consolidated with a solution of vinyl acetate, and the edges of the loose painted stucco were filletted with suitably tinted plaster of Paris.

CHENNAKESAVAPERUMAL TEMPLE, SOMAPALLE, DISTRICT CHITTOOR.—The paintings occur on the ceilings of the *mahamandapa* and the *ardhamandapa.* The loose paint-film and painted stucco were consolidated and secured in the usual way.

JAINA TEMPLE, TIRUMALAI, DISTRICT NORTH ARCOT.—The paintings occur on the ceilings and cells formed by walls under an overhanging cliff. In addition to the usual accretions found on paintings, visitors had inked some of the outlines of the paintings in blue. The accretions were removed with the help of organic solvents and paintings cleaned and preserved. Ink-stains were removed by the application of a weak aqueous solution of oxalic acid.

MATTANCHERI PALACE, COCHIN.—The paintings are confined to the ground and first floors of the palace and are in the form of panels on the walls. The paintings were cleared of accretions. The ink-stains on some of them were removed with oxalic acid. The painted surfaces were cleaned, consolidated and preserved, and the edges of the paint-film and the painted stucco were secured.

BRIHADISVARA TEMPLE, TANJORE.—Some of the sixteenth-century Nayaka paintings were removed, and the earlier Chola layer was exposed, cleaned, consolidated, preserved and made fit for photography. The edges of the loose paint-film were secured with vinyl acetate solution, and the edges of the loose painted stucco were filletted with plaster of Paris.

SITTANNAVASAL CAVE, DISTRICT TIRUCHIRAPALLI.—The' paintings at Sittannavasal were photographed in colour and cleaned.

B. TREATMENT OF ANTIQUITIES AND MUSEUM-EXHIBITS

The laboratory of the Museums Branch treated, preserved and restored a large number of copper, bronze, silver, iron, wood, ivory and bone objects belonging to the Central Asian Antiquities Museum, the site-museums, the National Museum of India, the Gandhi Memorial Museum and some State Museums and antiquities from the excavations at Rupar and Kausambi. The chemical treatment of nearly eighty silk, cotton and paper paintings belonging to the Central Asian Antiquities Museum and the National Museum was completed.

More than fifty panels of wall-paintings of the Central Asian collection were preserved. Their pigments had become loose and were flaking off; the ground and the plaster were brittle and crumbling. The treatment consisted of fixing the larger loose fragments with plaster of Paris on the back after the removal of dust from the painted side. The small pieces on the painted side were reset with a fixative. The complete fragment was then made into a rectangular block about ½ in. thick with plaster of Paris, and the painted side, when dry, was finally coated with a preservative.

The miniature paintings in the *Baburnama* belonging to the National Museum, numbering one hundred and fortyfour, were photographed in colour and about two hundred and fifty colour-transparencies were prepared. The work of comparing the transparencies with the originals and their cataloguing, indexing and labelling will soon be completed. Some stone sculptures at Sarnath, covered with lichen and mould, were chemically cleaned. The restoration of the large terracotta Ganga and the Yamuna images, found in innumerable fragments in the excavation of Ahichchhatra, was taken in hand, and the Ganga image was completely restored.

C. RESEARCH

PRESERVATIVES AND CLEANSING AGENTS.—In connexion with the chemical treatment and preservation of the Ajanta murals, experiments were conducted in the laboratory of the Archaeological Chemist with a view to devising suitable methods for dealing with the darkened brittle shellac-varnish which had been applied to the paintings in the previous years. Suitable reagents were developed, whereby it became possible to remove the varnish-

coat without disturbing the original pigments affecting their colour-values. Soap-solution was tried for the removal of smoke, but as soap contains some free non-volatile alkali, its use was not found to be free from objection, as the residue left after cleaning might produce undesirable after-effects on the painted surface. In the course of investigation it was found that judicious mixtures of water, rectified spirit and organic detergents as well as mixtures of organic solvents, such as rectified spirit, absolute alcohol, etc., were very effective in removing smoke and tarry matter in addition to yellow shellac-varnish from the painted surface. Organic detergents such as Gemax, Teepol, Tergitol, etc., were also experimented with. The experiments led to the development of very effective cleansing reagents for dealing with yellow varnish, smoke and tarry matter which disfigure the paintings at Ajanta, Ellora and Bagh. It is proposed to apply these methods and materials on an experimental basis to the paintings at these and other sites with a view to evolving suitable techniques for their preservation.

Experiments with bleached shellac-solution, when utilized for the preservation of paintings, showed that it was likely to undergo change and become yellow with age. Films of this solution were also been found susceptible to cracking and darkening due to exposure to heat and light.

POTTERY.—Several samples of potsherds were chemically examined and analysed for the Deccan College Post-graduate and Research Institute, Poona, and the South-western Circle of the Department. Samples of glass bangles from the excavation at Hastinapura were also examined and analysed, and it was found that in the Painted Grey Ware period the manufacture and working of glass had been fully understood.

Attention was also directed to the study of ceramic material, such as glazed pottery, glass beads, bangles, etc., collected at Kopia in Basti District. Glazed pottery from Saiyid-pur Bhitri and Rohtak is also being examined. The results of this investigation await completion.

SOIL-ANALYSIS AND GEOCHRONOLOGY.—The examination of the soil-samples from the Bahadarabad excavation was completed and the results' analysed. Similar samples from the excavation at Rupar were also subjected to mechanical analysis, petrographic examination and chemical analysis.

MISCELLANEOUS ANALYSES.—Chemical analysis of thirtyfour samples of metallic and other antiquities and analysis for the identification of several commercial preparations were also carried out.

6. MUSEUMS AND EXHIBITIONS

A. NATIONAL MUSEUM, NEW DELHI

The National Museum continued to develop under the Department of Archaeology with the addition of an Assistant Superintendent and a Deputy Keeper to the staff. Besides the provision of decent pedestals for sculptures, considerable improvement was effected in display in the galleries. Paper and card-board labels were and are being generally replaced by plastic and wooden bilingual ones painted in white, and a better type of lamp-shades was provided.

Two exhibitions of excavated antiquities were held during the year, one on the occasion of the meeting of the Central Advisory Board of Archaeology, held on. the I8th September I954, and the other in connexion with the meeting of the Central Education Advisory Committee, held on the I3th January I955. A special exhibition of Chinese objects presented to the Prime Minister on the occasion of his visit to China was also organized.

The Guide Lecturers continued to deliver lectures twice a week on approved subjects, besides taking round distinguished visitors.

Valuable additions, consisting of manuscripts, coins, paintings and textiles, were made to the collection. Noteworthy amongst them were a few punch-marked coins, three Indo-Greek coins, thirteen gold Gupta coins including one archer type of Chandragupta II and one horseman-type of Kumaragupta I, a gold coin of Sasanka, one coin of Anantavarman Chodaganga and a number of Indo-Muslim coins, including about thirty of the Mughuls. Out of one thousand and ninetyseven coins received during the year eightysix were treasure-trove finds; twelve were presented by the Government of Bombay and the rest by the Government of Uttar Pradesh. Two manuscripts of the *Shah-namah,* several rare copies of the *Quran,* an original *farman* and *nishan* of Shah Jahan and Shah Shujah respectively and an illustrated copy of the Udyoga-parvan, dated 1691, deserve mention. Over three thousand five hundred manuscripts in Arabic and Persian were also purchased from His Highness the Nawab of Tonk. The Prime Minister graciously presented a number of objects .received by him, such as the replica of a pillar of Asoka in gold and silver, a sword with an exquisitely-carved hilt presented to him at Bali, a wooden bust of Mahatma Gandhi, a beautiful silver tea-set presented by Madame Ali Sastroamidjojo of Indonesia and an embroidered silk bag belonging to Lord Curzon. Other presentations included a *sherwani* of *jamewar* presented by Nawab Sir Nizamat Jung Bahadur of Hyderabad, a bronze figure of Tara of the Pala school, a stone slab showing the Dasavatara on one side and Vishnu attended by Lakshmi and Sarasvati on the other, an exquisite figure of Ganga of the Sena period, a few Gupta terracotta heads, a couple of torsos and a few representative specimens of terracotta art of the Mughul period, all presented by Shri P. C. Paul of Mahanad, District Hooghly, West Bengal.

A number of inscriptions in fragments and a few medieval sculptures from such places as Chitorgarh and Nagari in Rajasthan were also received on loan from the Department of Archaeology.

The proposal of housing the National Museum in a building of its own received considerable attention during the year.

B. INDIAN MUSEUM, CALCUTTA

During the year the collection of the Archaeological Section, Indian Museum, Calcutta, was enriched by many acquisitions, including seven sculptures and seventythree coins. Among the former were three stone sculptures, viz., a fragmentary sculpture of the Gandhara school, presented by Dr. S. K. Chatterjee, Calcutta, an image of Bhairava (eleventh-twelfth century) from Domohanai, District Jalpaiguri, presented by the Deputy Commissioner of the District and another of Vishnu as *Kurmavatara* (end of the twelfth century) from Mahanad, District Hooghly, presented by Shri P. C. Paul.

The other four sculptures were of bronze, one each of Lakshmi-Narasimha, Vishnu, Venugopala and Ambika, all purchased. The images of Narasimha and Venugopala appear to be late Western Chalukya in date, while the Vishnu image is of the Pratihara period and that of Ambika of early medieval age.

Among other acquired objects were a manuscript on Hindu *samskaras* and purificatory rites written in Bengali characters of about seventeenth century and a miniature edition of the *Khorde Avesta* written in Gujarati (nineteenth century) from Bombay.

Of the seventythree acquired coins, nineteen were Hindu coins, eight of Vigrahapala, five of Adivaraha and six medieval *drammas* (obliterated) of uncertain variety. The rest comprised three coins of Alau'd Din Muhammad Shah, five coins of Akbar, three coins of Jahangir, nineteen coins of Shah Jahan, eight coins of Aurangzeb, three coins of Farrukhsiyar, one coin of Muhammad Shah, one coin of Muhammad Shah II, three coins of Shah Alam II and eight coins of Orchha State.

Trilingual labels were furnished for all the important sculptures displayed in the verandah of the ground floor of the Museum. Further work in this line is in progress.

C. CENTRAL ASIAN ANTIQUITIES MUSEUM, NEW DELHI

The Central Asian Antiquities Museum was further developed this year by the provision of greater exhibition-space and the display of further antiquities from the reserve-collection. Temporary loans of excavated antiquities were made for short-period exhibi- tions organized by the Karnataka Sangha in New Delhi and by the Musee Guimet in Paris. Antiquities from the reserve-collection were also made available to research scholars for reference and study. The work of arranging the reserve-collections and published material is in progress.

D. OTHER DEPARTMENTAL MUSEUMS

DELHI FORT MUSEUM.—Further additions to the galleries were made by exhibiting more paintings, *firmans* etc., from the reserve-collection.

SARNATH MUSEUM.—The opening of another gallery by re-arranging the reserve-collections is in progress, and the provision of bilingual labels in Hindi and English is nearing completion.

NALANDA MUSEUM.—A torso of a large-size stone image of Trailokyavijaya trampling on Siva and Parvati was removed from the site and added to the Museum.

FORT ST. GEORGE MUSEUM, MADRAS.—Eleven large oil-paintings, four colour-prints and two flower-vases, presented by Shri Sri Prakash, Governor of Madras, were included in the galleries. Thirteen coins were also added to the numismatic section. The arms and weapons section was re-organized to accommodate the recent acquisitions in the Museum.

NAGARJUNAKONDA MUSEUM.—The re-arrangement of the north and south wings of the Museum was completed.

AMARAVATI MUSEUM.—The re-arrangement of the sculpture-shed is progressing satisfactorily.

KONDAPUR MUSEUM.—A consolidated accession-register of antiquities in the Museum is nearing completion.

SANCHI MUSEUM.—A Vishnu image of the Gupta period and the head of an image of Siva of the tenth century, both found in the surroundings of the Museum, were added to the galleries. The preparation of an accession-register of antiquities is nearly completed, and steps were taken to re-organize the galleries within the limited space.

HAMPI MUSEUM.—About three hundred sculptures so far collected from the ruins of the Hampi site were arranged in the Guards' Quarters, an ancient monument at the site, which now houses the nucleus of the Museum.

JARDINE MUSEUM, KHAJURAHO.—Steps-are being taken to classify and arrange the sculptures in this open-air Museum. Plans are afoot to provide a suitable building for the Museum, so that the sculptures, many of which were recently cleaned and treated (above, p. 48) do not deteriorate by exposure.

E. MUSEUMS IN STATES

HYDERABAD MUSEUM.[1]—One thousand four hundred and thirtytwo coins were acquired, of which seven were purchased, nine were received as presents from the Bombay and Uttar Pradesh Governments and the rest were treasure-trove acquisitions. More than two hundred paintings, textiles, arms and weapons were also acquired. The Museum took part in the exhibitions held in connexion with the All-Kannada Literary and Cultural Festival, New Delhi, the Marathwada Sahitya Parishad, Latur, the Educational and Library Conference, Nalgonda, and the Central Flood Relief Fund, Gulbarga.

MUSEUMS IN RAJASTHAN.[2]—About a hundred paintings of the Rajput school and some typical costumes of Rajasthan were acquired for the *Jaipur Museum.* South Indian textile-pieces with needlework were added to the collection of the *Alwar Museum.*

[1] Information from the Curator of the Hyderabad Museum.

2 Information from the Chief Superintendent of Archaeology and Museums, Rajasthan.

The *Bharatpur Museum* was enriched by the addition of a number of images from Bayana and about two dozen paintings of the Jodhpur, Pahari and Mughul schools. The *Sardar Museum at Jodhpur* acquired a few medieval sculptures from Khed and Kiradu, portrait-paintings of the rulers of Mewar and musical instruments of Rajasthan. Typical Hadoti costumes, along with a number of paintings of the Hadoti school, were added to the *Kotah Museum.*

MUSEUMS IN SAURASHTRA.[1]—The *Jamnagar Museum* took part in the Jamnagar Nayi Talim Pradarsan at Sanosara and the exhibition held in connexion with the Indian History Congress at Ahmedabad. In the *Rajkot Museum* the listing of the Gupta coins was in progress. This Museum and the *Bhavnagar Museum* participated in several exhibitions. The *Prabhas Patan Museum* obtained nearly fifty sculptures, three inscriptions and a broken Shah inscription from Panch Bibi tomb and two inscriptions dated respectively in *Vikrama-samvat* I45I and I657, from the neighbouring areas and collected pottery from the Somnath temple-area and from Shah-no-Timbo.

MUSEUMS IN MYSORE.[2]—The collection in the *Museum of Antiquities, Chitaldrug,* was considerably augmented. A large number of ancient coins, mostly Satavahana, were acquired. A square punch-marked coin of silver, stated to be a surface-find from Chandra-valli, is significant. The State Department of Archaeology participated in the exhibition of the All-Kannada Literary and Cultural Festival at New Delhi.

MUSEUMS IN MADHYA BHARAT.[3]—Thirtytwo paintings representing the Mughul and Kangra schools were purchased for the *Gwalior Museum.*

F. EXHIBITION OF BUDDHIST ART AND ANTIQUITIES IN RANGOON

An important event of the year was the organization by the Department of Archaeology of an exhibition of Buddhist an and antiquities in Rangoon in response to an invitation from the Government of Burma. Antiquities, mainly comprising stone and bronze sculptures, terracottas, manuscripts, paintings, photographs, etc., were collected from the Departmental Museums and the Indian Museum and those at Mathura, Patna, Madras and Hyderabad, which readily responded to the call for co-operation. The exhibition was opened by the Prime Minister of Burma on the 29th January I955 and continued for fifty days, during which no less than a lakh and a half persons visited it. Illustrated catalogues were printed in English and Burmese, and a series of lectures on Buddhism and Buddhist art in India and Burma was arranged.

G. OTHER EXHIBITIONS

Besides the above, the Department of Archaeology organized and participated in the following exhibitions:—

The *South-eastern Circle* arranged an exhibition of antiquities at Rajahmundry in April I954 on the occasion of the Ramanavami celebrations.

1 Information from the Saurashtra Government.

2 Information from the Director of Archaeology, Mysore.

3Information from the Director of Archaeology, Madhya Bharat.

Two exhibitions were held by the *Western Circle* at Ahmedabad and Baroda on the occasions of the Indian History Congress and Indian Science Congress respectively.

The *Mid-eastern Circle* partook in the exhibition held at Patna during the All-India Educational Conference. Photographs, drawings and maps illustrating the history of Patna and photographs of the important monuments in the Circle were displayed.

The *Southern Circle* participated in the Government-sponsored museum and archaeology section of an exhibition in Madras, which coincided with the session of the Indian National Congress in January I955. Photographic enlargements illustrating the evolution of south Indian temples and colour-prints and colour-transparencies of the Tanjore and Sittannavasal paintings formed a chief attraction of the exhibition.

The *Epigraphical Branch* lent impressions of a number of inscriptions showing the development of south Indian scripts and a few photographs of south Indian temples and sculptures to the same exhibition. At the request of the Physics and Soil Mechanics Officer, Madras, the Branch also supplied for exhibition impressions of a few inscriptions referring to irrigation-works in south India.

The *Chemical Branch* displayed a few photographs of the paintings at Tambekarwada, Baroda, showing the effective results of the chemical treatment of the paintings, at the exhibitions held in connexion with the sessions of the Indian History Congress and the Indian Science Congress respectively at Ahmedabad and Baroda.

7. ARCHAEOLOGICAL GARDENS

DELHI.—The re-organization of the archaeological gardens in and around Delhi, which started in I950 with the transfer of their control from the Central Public Works Department to the Department of Archaeology, is now almost complete. Over three thousand rooted plants were raised from the stock-plants at the central nursery in the Central Asian Antiquities Museum premises by vegetative propagational methods of cutting, layering, sucker-ing, grafting and budding. Over a lakh of flower-seedlings were raised from seeds and were partly distributed to different gardens and partly planted in nursery-beds for seeding in the next year. A small orchard with hardy fruit-kinds was planted at the rear plot of the Humayun's tomb. An area of 5.08 acres in different gardens was re-grassed during the year. The gardens were maintained in good condition by judicious manuring, watering, trimming and other seasonal horticultural operations and looked very attractive during the season.

AGRA.—The long-standing proposal of taking over the archaeological gardens at Agra at last materialized during the year. The actual transfer of charge took place on the Ist August I954, when a branch of the Garden Section was established at Agra. The anticipated difficulties by way of a common water-supply and a common nursery were well-nigh solved by the construction of a large water-reservoir and the earmarking of one of the existing reservoirs for the exclusive requirements of the Taj gardens and by a temporary division of the Khan-i-Alam nursery-facilities till the U. P. Government established a nursery for their own use. After the assumption of charge a large number of over-crowding trees in the gardens were severely pruned to enframe the monuments suitably. A workshop was opened for the repair of garden-implements, and an electric motor-pump was installed at the new reservoir to pump water to the Taj gardens.

OTHER GARDENS.—Except minor gardens and those attached to Bibi-ka-Maqbara, Aurangabad, and to Tipu Sultan's palace, Bangalore, all the important gardens attached to monuments of national importance, such as the ones at Pinjore, PEPSU, and Daria Daulat, etc., at Srirangapatna, Mysore, continued to be maintained by the respective State Governments on an agency-basis. Officers of the Garden Section of the Department inspected a large number of gardens, gave advice and prepared plans about their improvement. There are proposals for laying out suitable parks at Khajuraho, Sarnath, Mandu and other places.

RAJASTHAN.[1]—The Rajasthan Government attended to the garden attached to the Amber palaces but could not maintain that at Mohan Bari, situated on a raised platform outside those palaces by the side of the Maotha lake, due to lack of water-facilities.

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[1]Information from the Chief Superintendent of Archaeology and Museums, Rajasthan.

8. IMPORTANT DISCOVERIES

PALAEOLITHIC SITES IN RAJASTHAN.—Shri S. R. Rao found six more palaeolithic sites in District Chitorgarh. Apart from a large number of tools found in the beds of the rivers Gambhiri, Berach and Chambal at places like Chitorgarh, Nagari and Sonita, the rivers Bamani and Ruparel and the *nallas* of Dodha and Parsoli yielded considerable numbers of palaeoliths. South Rajasthan seems to have been a pivotal region where both the Sohan industry of Panjab and the Madras handaxe industry met. The sequence of cultures noticed in Gujarat, viz. the occurrence of microliths on the river-banks and of palaeoliths in the river-beds, was confirmed in Rajasthan. Some tools were found at *Bichore* in the Parsoli *nalla*, which joins the river Bamani. Handaxes and cleavers were the main types. A few implements were picked up at *Haripura,* situated on the Bamani, a tributary of the Chambal, from the 5-fr. thick conglomerate-bed. *Rathanjna,* an important site near Nimbahera, situated on the Gambhiri, yielded a large number of handaxes, besides cleavers and choppers. The palaeolithic site of *Sigoh,* also near Nimba-hera, is on the bank of the Kadamli. It was here that microliths of chalcedony and agate were found in the loessic mounds on the river-bank. Lunates, triangles and points were some of the typical tools. *Tajpura,* on the Ruparel, was found to be a rich site with a large number of cleavers but a very few handaxes. Tools were recovered from the gravel-beds below and above the conglomerate-bed. The site at *Dhangadman,* situated on the Pipla-ka-nalla, yielded a few implements, consisting of pebble tools, Abbevilleo-Acheulian handaxes, late Acheulian handaxes, and Levalloisian flakes.

STONE AGE SITES ON THE SIRSA.—The river Sirsa, originating near Pinjore in Simla Hills, flows between those hills and the Siwaliks and joins the Sutlej a few miles above Rupar. At several sites along this river, such as *Dher Majra, Dhang, Dadhi* and *Merhanwala,* a number of quartzitic palaeoliths, mainly choppers, scrapers and flakes (pl. LXII), were discovered by Dr. Y. D. Sharma. Typologically the implements represented a late Sohan tradition.

STONE AGE SITES ON THE SOHAN.—In the Siwaliks in Hoshiarpur District also some palaeoliths were picked up by the same officer from the river Sohan (not to be confused with the homonymous river near Rawalpindi, a tributary of the Indus, which has given its name to the Panjab palaeolithic industry). A ridgy water-shed near Daulatpur divides the valley into two basins, so that the waters in the northern basin fall into the Beas and those of the southern discharge into the Sutlej, both the streams going by the name of Sohan. The implements (pl. LXII) were found about a mile north of *Daulatpur* on the Beas branch of the river and also showed affinity with the late Sohan tradition. The existence of such artefacts in the Sirsa and Sohan valleys considerably enlarges the area of the Sohan industry.

MICROLITHIC SITES IN EAST KHANDESH.—Dr. B. B. Lai made a further collection of microlithic tools and cores of chalcedony, quartz, chert and jasper at the back of the Chandika Devi temple at *Patan,* augmenting the collection made by him last year from a hillock to the north of the temple. The present collection included a nicely-worked awl (borer) and two tanged arrow-heads of chalcedony. Arrow-heads are of rare occurrence in the Indian microlithic series.

FURTHER MICROLITHS FROM HOSHANGABAD.—A very large number of microliths, consisting of blades, points, triangles, lunates, etc., most of them showing geometric shapes, were collected by the same officer from the rock-shelters at *Adhamgarh Quarry,* supplementing his last year's collection.

HARAPPA AND OTHER EARLY SETTLEMENTS ON THE SIRSA.—A few Harappa and other early settlements on the upper Sutlej were reported last year. Similar settlements on the ' Sirsa were located this year by Dr. Sharma. On the right bank of the river, below its junction with the Chikni Nadi, close to the village of *Dhang,* I2 miles from Rupar, was found the typical pottery of the Harappans. Further south, at *Merhanwala,* I3 miles from Nalagarh, the same pottery was encountered. These sites lay on the river-terraces and flat surfaces on the hills and indicated that the Harappans had not stopped at Rupar but had proceeded further north into the hills along the valleys of smaller rivers. On this stretch the Painted Grey Ware was also noticed at two places, at *Manguwal* on the Chikni Nadi and at *Baddi.*

HARAPPA AND OTHER EARLY SETTLEMENTS IN GUJARAT.—Two Harappan sites, at *Phala* and *Kota* in District Halar, three microlithic sites, at *Sherdi* in the same District and *Beran* and *Keshav,* both in District Sorath, were discovered by the Superintendent of Archaeology in Saurashtra.[1] Shri S. R. Rao found a few more Harappa sites. *Kaero Timbo, Goni Timbo, Samadhiala* and *Chashiana,* all situated within a radius of five miles from Rang-pur, established that Rangpur had been a large settlement with small villages around. The sites of *Lothal* (under excavation, above, p. I2) and *Kana Sutaria,* 25 miles south of Ahmedabad, were among the sites plotted on the map (fig. 7) as a result of exploration.

The bearing of the excavations at Rangpur and Lothal and the explorations in Saurashtra undertaken in recent years on the movement of the Harappa folk in the Gujarat peninsula may be summed up here. The Harappa sites in Gujarat now number about twenty, most of which are concentrated near the coast. Shri Rao feels that this indicates a maritime route followed by the Harappans in their southward movement. The central part of Saurashtra, being a hilly tract, is an inhospitable region; so is the narrow strip of land connecting the peninsula with the mainland, being partly semi-desert and partly a salt-waste difficult to cross. Hence the Harappans seem to have taken a sea-route and landed first at the ports situated on the mouths of rivers, where they made temporary settlements, and to have moved further interior along the river-banks, so as to have larger settlements with assured water-supply as at Rangpur, Lothal and Gop. It is significant that not a single Harappa site was found in north Saurashtra; yet it is in this region that such sites were to be expected had the Harappans followed a land-route from Sind.

[1] Information from that officer.

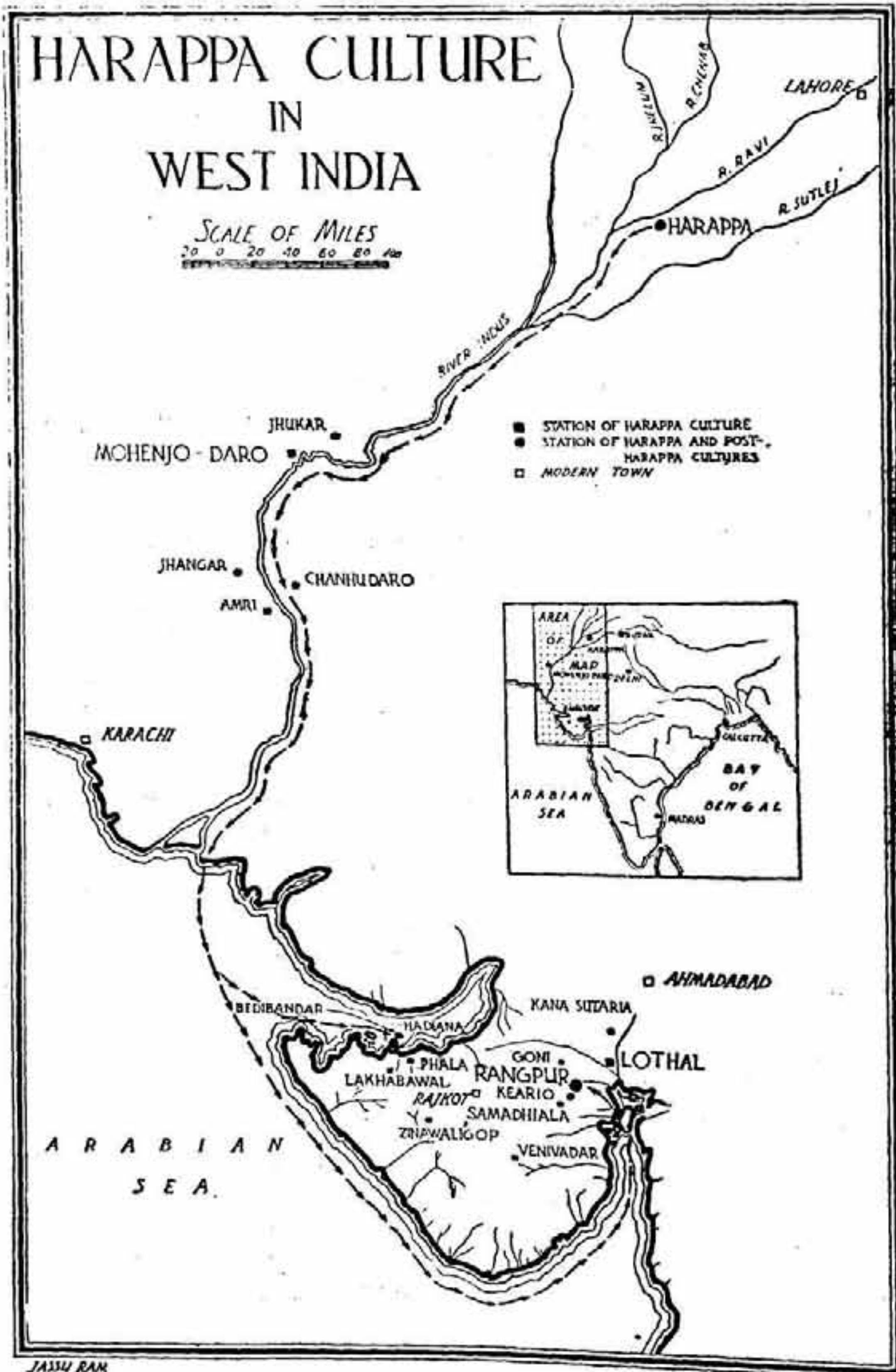

HARAPPA CULTURE
IN
WEST INDIA
SCALE OF MILES
20 0 20 40 60 80 100
LAHORE
R. RAVI
R. SUTLEJ
HARAPPA
RIVER INDUS
JHUKAR
MOHENJO - DARO
STATION OF HARAPPA CULTURE
STATION OF HARAPPA AND POST-HARAPPA CULTURES
MODERN TOWN
JHANGAR
CHANHUDARO
AMRI
KARACHI
ARABIAN SEA
BAY OF BENGAL
AHMADABAD
BEDIBANDAR
HADIANA
KANA SUTARIA
PHALA
GONI
LOTHAL
LAKHABAWAL
RANGPUR
RAJKOT
KEARIO
SAMADHIALA
VENIVADAR
A R A B I A N
S E A
JASSU RAM

FIG. 7

ROCK-ENGRAVINGS IN CHOTA NAGPUR.[1]—Rock-engravings were found by Shri Vijaya-kanta Mishra at *Dhobadiha* in Sadr Sub-Division, District Chaibasa, on twelve rocks of different sizes, throwing light on the *naga* cult.

FURTHER PAINTED GREY WARE SITES.—Shri B. B. Lai discovered the Painted Grey Ware at *Bairat*, identified with Viratanagara of the *Mahabharata,* and *Bijwa,* respectively in Districts Jaipur and Alwar, and at *Bhadasa*, *Malab* and *Gohana*, all in District Gurgaon.

ANCIENT SITE AT HATHRAS, DISTRICT ALIGARH.—Sherds of the Painted Grey and Northern Black Polished Wares were found by Dr. K. N. Puri at *Qila Hathras.* The top of the mound is occupied by late medieval and modern constructions, which have considerably disturbed the site; a closer examination may, however, be fruitful.

EARLY SITES IN HYDERABAD.[2]—Eight prehistoric sites within a range of 40 miles south of *Hyderabad* and a site belonging to the protohistoric and Andhra periods at *Ter,* District Osmanabad, were discovered by the Hyderabad Archaeological Department.

N. B. P. WARE FROM BIHAR.[3]—TWO sites with the Northern Black Polished Ware, respectively at *Baligarh* near Khajauli, District Darbhanga, and *Dharhara* near Banmanki, District Purnea, were found by Shri Vijayakanta Mishra. Besides, terracottas of the second-first century B.C. were also collected.

PUNCH-MARKED AND OTHER COINS FROM BIHAR.—A hoard of more than a hundred punch-marked coins was unearthed by Shri Mishra at *Chakramdas,* Vaisali, District Muzaffarpur. A number of cast coins, punch-marked coins and a coin of Pratapaditya of Kashmir were also found by him at *Pirnagara,* District Monghyr.

RED POLISHED WARE IN SAURASHTRA.[4]—The Superintendent of Archaeology in Saurashtra discovered additional Red Polished Ware sites at *Kalavad,* District Halar, and *Arena, Boricha, Sutrapada* and *Bhadaria,* all in District Sorath.

BUDDHIST ANTIQUITIES IN ANDHRA.—At the top of the hill Yegumalli Tatakonda, at a distance of 3 miles from Vangalapudi, District East Godavari, a fairly well-preserved-brick *stupa,* measuring about 600 ft. in circumference at the base and I3 ft. in height, was located by Shri A. S. Gadre. The bricks measured I7 X I0 X 3 to 4 in. At *Lingaraju-palem* near Dharmavaram, District Anantapur, the same officer found a pillar carved with the representation of a Buddhist *stupa* with the umbrella etc. At a distance of 1½ miles from the village he found a mound, 6 acres in area, locally known as the Rakasi-metta, obviously the site of a large Buddhist *vihara.* A stone *dharma-chakra,* with a decorated border having alternating *triratna* and leaf-motif, its diameter 3 ft. 4 in. and tenon 6¾ in. in length and 7 in. in breadth, was discovered here.

ANCIENT SITES IN KARNATAK.—Following the information received from the Director, Kannada Research Institute, Dharwar, Shri B. K. Thapar visited three ancient sites. At *Herakal,* 7 miles to the north of Baghalkot, he found plenty of the 'Andhra' ware and a

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1 Information from Shri Vijayakanta Mishra.
2 Information from the Assistant Director of Archaeology, Hyderabad.
3 Information about this and the next item from Shri Vijayakanta Mishra.
4 Information from the Superintendent of Archaeology, Saurashtra.

few pieces of the Red Polished and Black-and-red Wares. The site at *Ittagi,* District Dharwar, lying on the Tungabhadra, was noticed to contain the 'Andhra' and the 'mega-lithic' Black-and-red Wares. From the third site, *Pattadakal,* District Bijapur, about a mile to the south-west of the present village along the bank of the Malaprabha, the objects collected by him included sherds of greyish black ware with grooves on the rim and the body, characteristic of the early medieval period, and some sherds of non-descript black-slipped ware. The settlement was probably contemporary with the famous early Chalukya temples of the place.

SCULPTURES AND OTHER ANTIQUITIES IN MADHYA BHARAT.[1]—An ancient site, 2 miles north-east of *Bhanpura,* District Mandasor, and close to the foot of the extensive tableland called Pathar in Vindhya Pradesh, was found to be rich in remains like sculptures, ruined habitations and fortification-walls. The adjacent tableland is also thickly studded with numerous antiquities discovered at such localities as *Navli, Kethuli, Taksake-swar, Hinglagarh, Chainpur,* etc. A Vishnu image of the tenth-eleventh century was found at *Sheopur,* District Mandasor.

SCULPTURES AND OTHER ANTIQUITIES IN HYDERABAD.[2]—At *Charthana,* District Parbhani, clearance exposed to view remains of an underground Jaina temple, twentyfour Jaina images, carved pillars, etc. Several old sculptures and inscriptions were discovered at *Madharam,* District Nalgonda, at *Patancheru,* District Medak, and near *Gandipet,* District Hyderabad. About one hundred sculptures and inscriptions were recovered at and around *Kalyani,* District Bidar.

SCULPTURES IN SAURASHTRA.[3]—Nearly fifty sculptures were recovered from the area around *Prabhas Patan* and from the old mosque and other buildings in the same locality. They included representations of Vishnu and Siva and architectural pieces.

SCULPTURES FROM RAJASTHAN.[4]—Several sculptures from *Abaneri* and an image of three-legged Bhairava from *Kiradu,* with an inscription in *Vikrama-samvat* I9I6 specially mentioning it as a *tripada-murti,* were brought to light.

[1] Information from the Director of Archaeology, Madhya Bharat.
[2] Information from the Assistant Director of Archaeology, Hyderabad.
[3] Information from the Superintendent of Archaeology, Saurashtra.
4 Information from the Chief Superintendent of Archaeology and Museums, Rajasthan.

9. TREASURE-TROVE

Following are some of the important treasure-troves brought to the notice of the Department. It is very likely that the information is incomplete, for some discoveries may not have been reported. Of the reports received, those lacking in particulars have been excluded.

KSHATRAPA COINS FROM GONDARMAU, BHOPAL.—A hoard of fiftyone silver coins of the Western Kshatrapas was reported from *Gondarmau,* 7 miles north-west of the town of Bhopal. The hoard consisted of five coins of the Mahakshatrapa Vijayasena, six coins of the Mahakshatrapa Rudrasena II, seventeen coins of Bhartridaman both as Kshatrapa and Mahakshatrapa, ten coins of the Kshatrapa Visvasena, three coins of the Kshatrapa Rudrasimha II and one coin of the Mahakshatrapa Svami-Rudrasena III, the attribution of the remaining nine coins being uncertain. All the coins were dated, the legible dates ranging from Saka I57 to 270 (A.D. 235 to 348). Like the Uparkot and Sarvania hoards, this hoard also appears to have been buried at the end of the earlier reign-period of the Mahakshatrapa Svami-Rudrasena III, whose coins are the latest to be represented in these hoards.

GUPTA COINS FROM BHANDARA, DISTRICT CHANDA.—Twelve gold coins of Mahendra-ditya and Prasannamatra were reported.

INDO-SASSANIAN COINS FROM SIRSA, DISTRICT DRUG.—A hoard of one hundred and thirtynine copper Indo-Sassanian coins was found together with a necklace of debased gold in an earthen pot.

COINS FROM KHOKRA KOT, DISTRICT ROHTAK.—One hundred and seventyeight copper coins, found in a village 5 miles from *Khokra Kot,* were presented to the Department by the finder and are now being cleaned.

KALACHURI COINS FROM BASARWA, DISTRICT AZAMGARH.—Twentytwo gold coins of the Kalachuri Gangeya with four pieces of silver ornaments and a cowrie-shell were recovered.

KALACHURI COINS FROM RATANPUR, DISTRICT PURL—Ten gold coins, two of Ratna-deva and eight of Prithvideva, were recorded.

CHAHAMANA COINS FROM ISARDA, DISTRICT SAWAIMADHOPUR.—Twentyfive copper coins were found.

JAINA BRONZE AT MEU, DISTRICT MEHSANA.—One of the bronzes recovered from this place was a *chaturvimsatika-patta,* similar to the one found previously at Akota, Baroda.

JAINA IMAGES FROM CAMBAY.—Fortyone marble images of the Tirthankaras, some of them inscribed, were found. The earliest date on one of them was *samvat* I397. They were handed over to the Jaina community for worship.

JAINA IMAGES FROM DISTRICT MEHSANA.—Marble images of the Tirthankaras were found at *Vasai* and *Dharnoj.*

VIJAYANAGARA COINS FROM GOLLAPALLI, DISTRICT KRISHNA.—Of the fifty gold coins, one was a half-pagoda of Devaraya (probably Devaraya I, I406-I0), thirtyseven were half-pagodas of Krishnaraya (I509-I529), three more were probably of the same ruler, one was a Gandikonda pagoda of Ramaraya (*circa* I565), three were of the Ganda-bherunda type, of which one had the legend Ramachandraraya (?), and the remaining five were unidentified.

COINS FROM-PUTHUDY THAVALAM, DEVIKULAM TALUK, TRAVANCORE.-A collection of thirtyfive *gold vasi panams* was recorded.

PAGODAS AND OTHER COINS IN MADRAS.-Of the finds brought to the notice of the Madras Government, a collection of twentyeight coins, including one swami-pagoda and twentytwo old star-pagodas of the East India Company, from *Singampunari,* District Ramanathapuram, and one rupee of William IV, I835, from *Soachani* in the same District deserve mention.

MUGHUL COINS IN EAST U. P.-Eight coins of Akbar, five of Jahangir, eleven of Shall Jahan and seven of Aurangzeb, all of silver, were found at *Puraina,* District Basti Two coins of Shah Jahan, four of Aurangzeb and a worn-out coin, all of the same metal, were received from Muhammadabad sub-treasury, District Azamgarh. From *Bankasia,* District Basti, came two silver coins of Nasiru'd Din Mahmud I and twenty one coins of the same metal of Alau'd Din Muhammad Shah of Delhi.

MUGHUL COINS FROM KAOLAS, DISTRICT NANDED.-A hoard of forty silver coins (I709-I806) was found.

MUGHUL COINS FROM BHASE, DISTRICT AURANGABAD.-A hoard of one hundred and one silver coins (I628-I748) was reported.

MUGHUL COINS FROM GOLAPNAGARI, DISTRICT AURANGABAD.-A hoard of nineteen silver coins (I658-I707) was recovered.

LATE MUGHUL COINS FROM MALREDDIPALLI, DISTRICT ANANTAPUR.—Four silver coins and some gold ornaments constituted the find. Of the coins one was of Alamgir II, issued by the East India Company for the Madras Presidency, and three were of Shah Alam, issued by the French Company.

COINS OF SHAH ALAM FROM LUDHIANA.—Thirteen silver coins were discovered.

BRONZE-FINDS IN MADRAS.-The following may be recorded: four Durga images one Prasanna Ganapati and one Karuppannasvami from *Pudukudi South,* District Tanjore; a Parvati from *Kayavur* in the same District; a Bhudevi and a Devi from *Nedu-vasal,* also in the same District; and a standing Ganesa, a Nataraja, Vinadhara Dakshina-murti and two Parvati images from *Puthur East,* District Salem.

MISCELLANEOUS FINDS IN HYDERABAD.-The total number of coins discovered in Hyderabad was over one thousand and four hundred, all of published types representing nine dynasties. In addition, a gold *sankha* and *chakra* of fine workmanship and a medallion-like gold ear-ring with a star in the middle, a specimen of delicate filigree-work was found.

I0. PUBLICATIONS

A. DEPARTMENTAL PUBLICATIONS

ANCIENT INDIA.—During the year, no. 8 (I952) of *Ancient India* was published. The next three numbers, 9, I0 and II (I953, I954 and I955) are in the printing stage and are expected to be published by September I955. With this, the regrettable arrears in the publication of this Bulletin will be cleared. It may be added that no. 9 is designed to be a Special Number, to commemorate the completion of fifty years of the Archaeological Survey of India.

GUIDE-BOOKS.—*Mahabalipuram* was reprinted, and *Agra Fort* is in an advanced proof-stage. The re-printing of *Guide to Sanchi* by Sir John Marshall is in the final stage of printing.

MEMOIRS OF THE ARCHAEOLOGICAL SURVEY OF INDIA.—NO. 72, *The Inscriptions of Chamba* by B. Ch Chhabra, is passing through the press. No. 73, *Sanskrit Literature and Art—Mirrors of Indian Culture* by C. Sivaramamurti, was published during the year. A memoir entitled *The Great Temple of Tanjore—its Sculptures and Paintings* has been taken in hand by T. N. Ramachandran; it is to contain a large number of reproductions in colour of the paintings in the temple and of dance-poses.

CORPUS INSCRIPTIONUM INDICARUM.—The overdue publication of the fourth volume of the series, *Inscriptions of the Kalachuri-Chedi Era* by V. V. Mirashi, is being expedited, and the volume is likely to be available ere long. The material for the revised edition of the third volume, *Inscriptions of the Guptas* by D. R. Bhandarkar, is being made press-ready. A portion of the material for the second part of the second volume, *Early Brahmi Inscriptions*, entrusted to Heinrich Luders long ago, has been received from Professor Ernst Waldschmidt of Gottingen. Steps are being taken to have it printed.

EPIGRAPHIA INDICA.—Parts ii and iii of volume XXIX were issued during the year, while parts iv, v, vi and vii of the same volume and part i of the next were passed for final printing. Part viii of volume XXVII and part ii of volume XXX are in the press.

ANNUAL REPORTS ON SOUTH INDIAN EPIGRAPHY.—The Reports for I943-44 and I944-45 were passed for printing.

ANNUAL REPORTS ON INDIAN EPIGRAPHY.—The Report for I947"4[8] was passed for printing, while those for I948-49,I949-50 and I950-5I are in the press. Earnest efforts are being made to bring the series up to date.

EPIGRAPHIA INDO-MOSLEMICA.—The number for I949 and I950 of this two-yearly journal was published during the year. The next numbers of the journal will be known as *Epigraphia Indica—Arabic and Persian Supplement*, of which those for I95I and I952 and for I953 and I954 are in the press.

PICTURE-POSTCARDS.—The following sets of picture-postcards were reprinted: Sarnath, Elephanta, Western Indian Caves (Karla, Bhaja and Bedsa), Kanheri and Bijapur. Other sets are awaiting reprint, and new sets, including one of the Ajanta paintings in colour, are in hand.

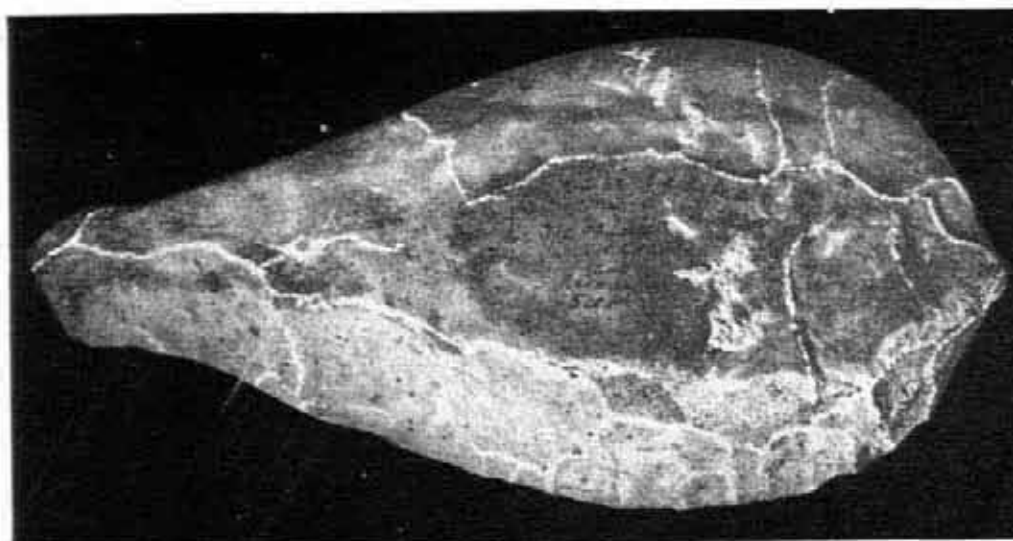
B. OTHER PUBLICATIONS

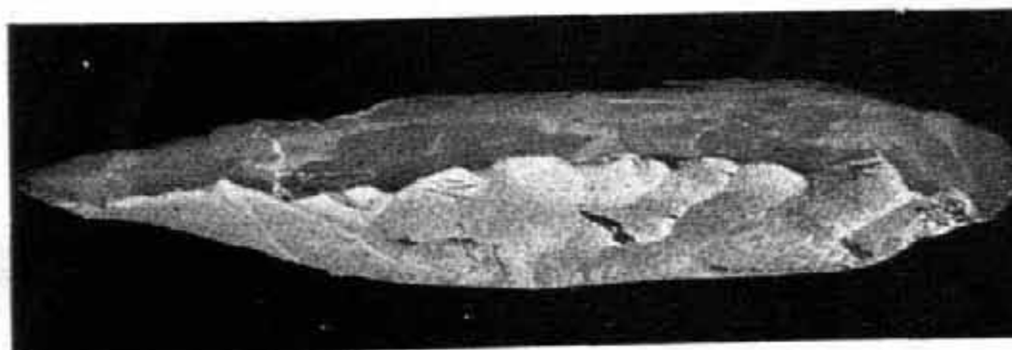
The Hyderabad Government published the fourth part (text and plates) of *Ajanta*. A Hindi version of the *Guide-book to Ajanta* by Shri Ram Sharma was issued. Other publications, *Neurgaon Inscriptions* by P. Sreenivasachar, *Corpus of Inscriptions in the Kannada Districts of Hyderabad* by P. B. Desai, *Corpus of Inscriptions in the Telangana District of Hyderabad* by P. Sreenivasachar, a new edition of *Asokan Edict at Maski* (Hyderabad Archaeological Series) by D. C. Sircar and *Bulletin of the Hyderabad Archaeological Department* for I95I are in different stages of printing. A monograph on the punch-marked coins and a catalogue of the Satavahana coins in the Hyderabad Museum are being prepared for the press.

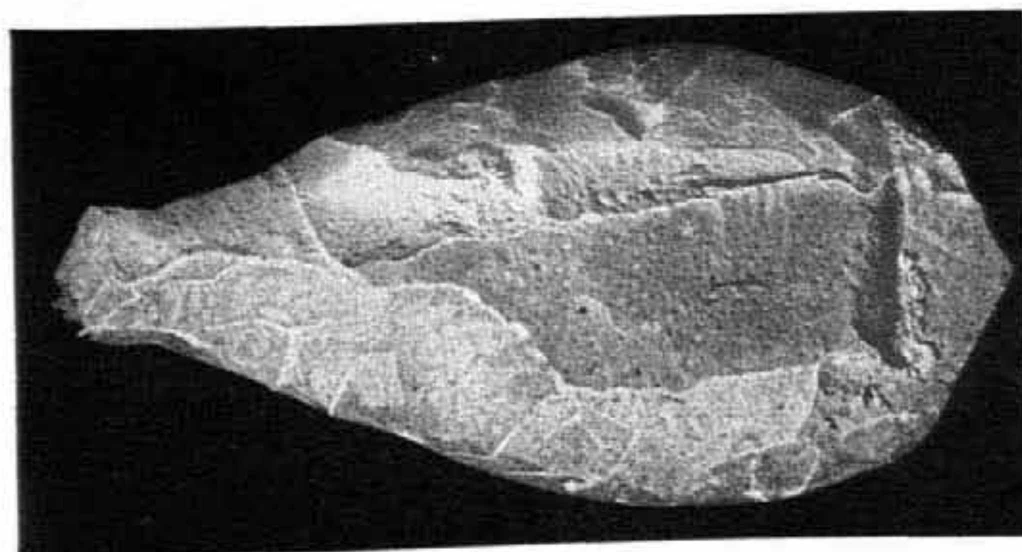
The Travancore-Cochin Government are taking steps to see through the publication of the tenth volume of the Travancore Archaeological Series.

The Rajasthan Government published six booklets in their 'As Stones Speak' series.

GIPND—LS—68 Div. of Arch.—12-9-55—2,000.

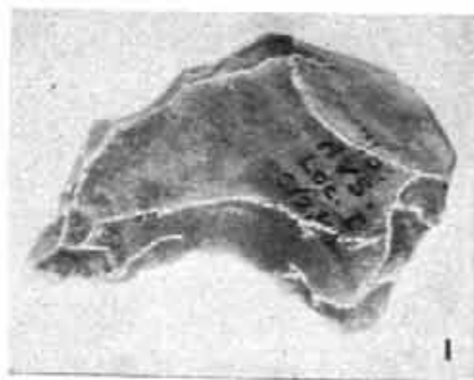




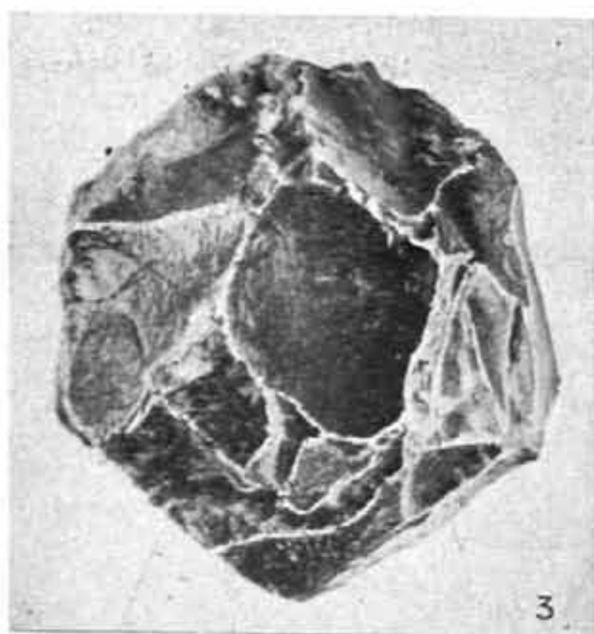


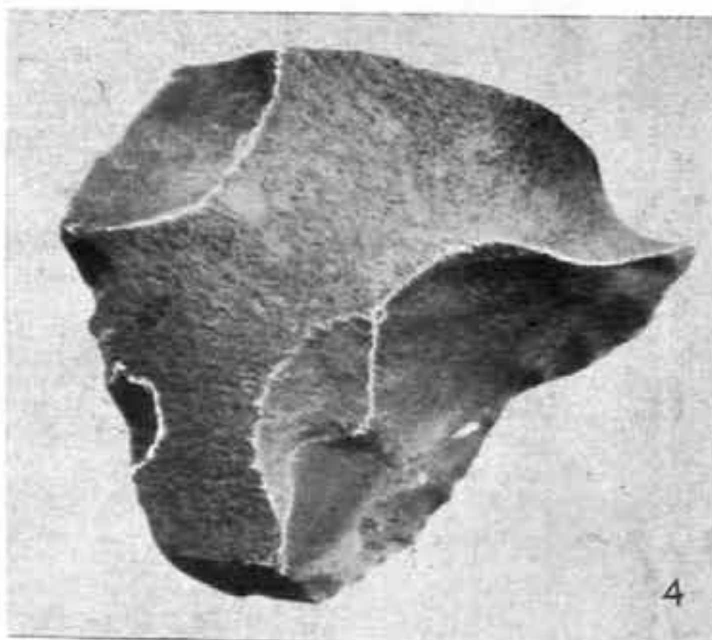
Nevasa : an Acheulian-like handaxe on trap, three views. Ht. 9 in. *See page 5*

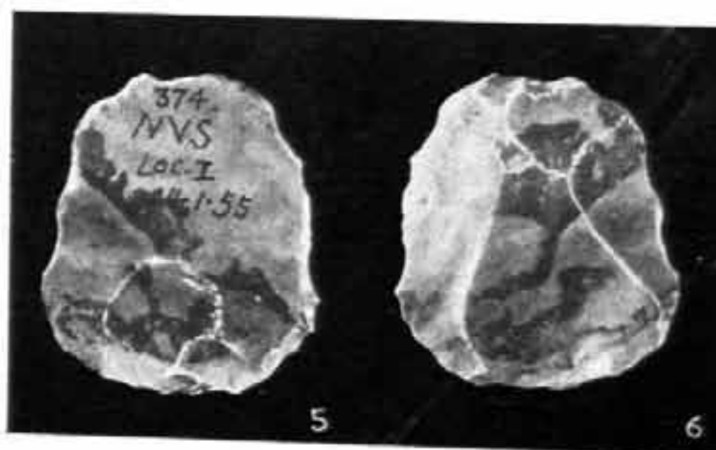
PLATE II





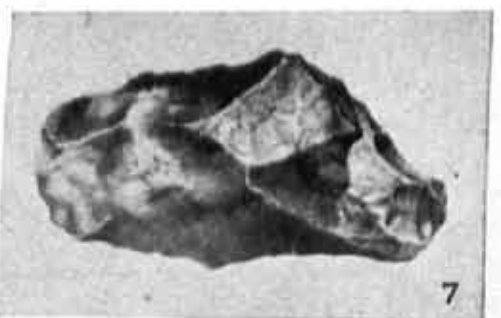






Nevasa, stone implements : 1 *and* 2, *hollow scrapers;* 3 *and* 4, *side-scrapers ;* 5 *and* 6, *fine flakes in Levallois technique. Scale* $\frac{1}{1}$, *except* 4, *which is* ×2. *See page* 5

PLATE III









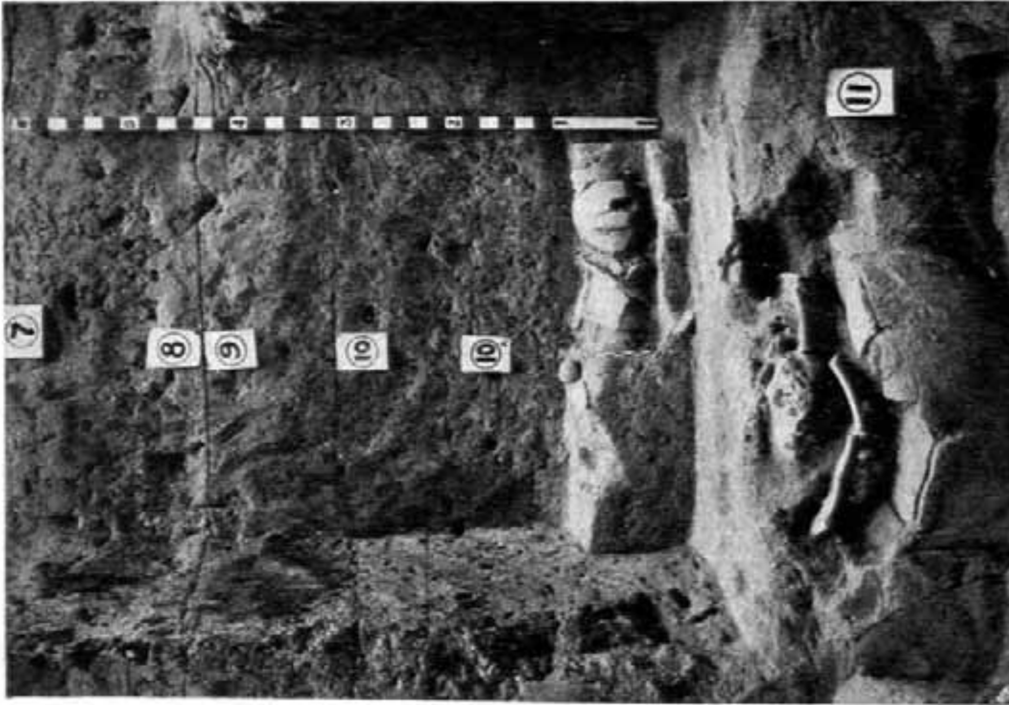




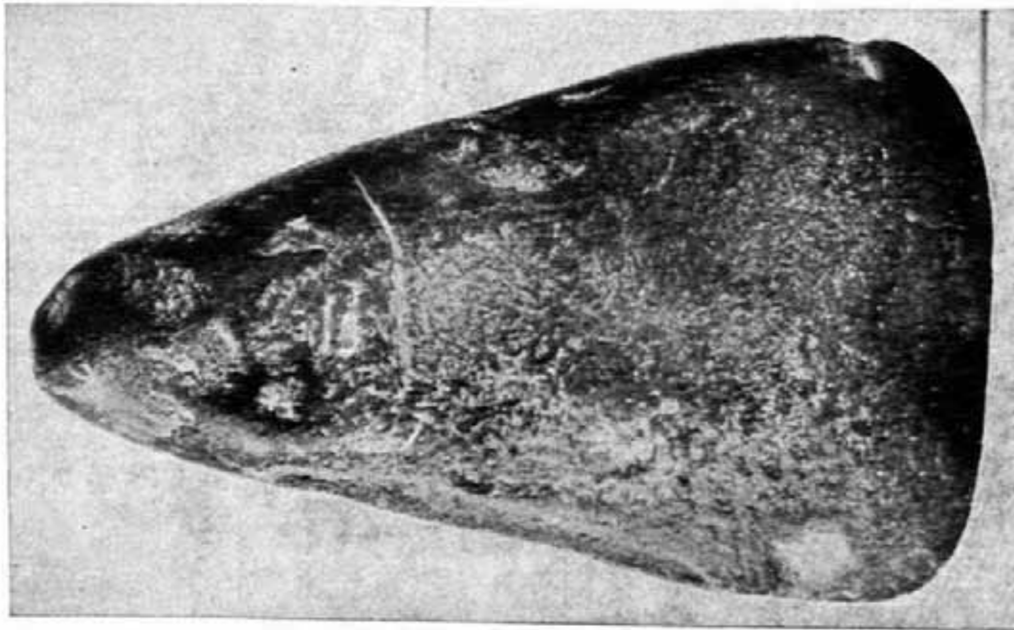


Nevasa, stone implements : 7, *side-scraper*; 8 *and* 9, *end-scrapers*; 10, *point*; 11 *and* 12, *burins*; 13, *borer*.
Scale : × 2, *except* 7 *and* 8, *which are* $\frac{1}{1}$ *See page 5*

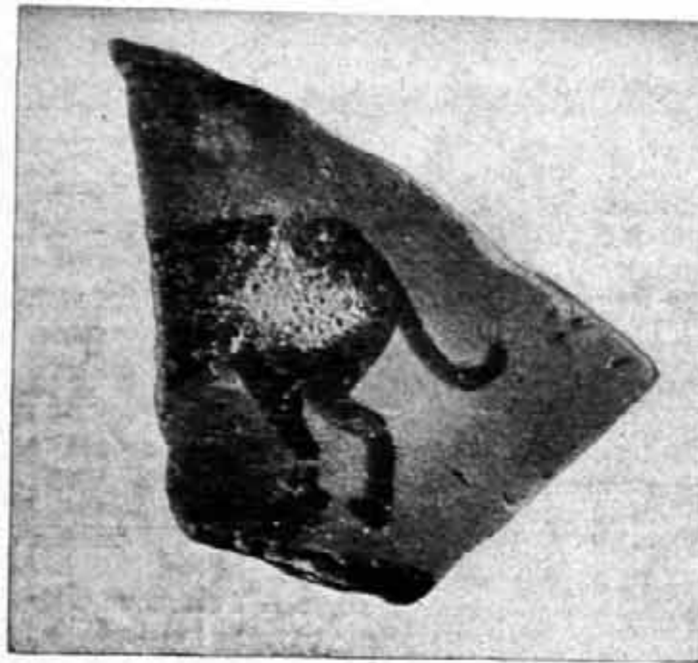
PLATE IV



B. *Nevasa : section showing a burial-urn and polished stone axe in situ.* *See page 7*



A. *Nevasa : polished stone axe, Phase I. Ht. 5¼ in.* *See page 5*



A



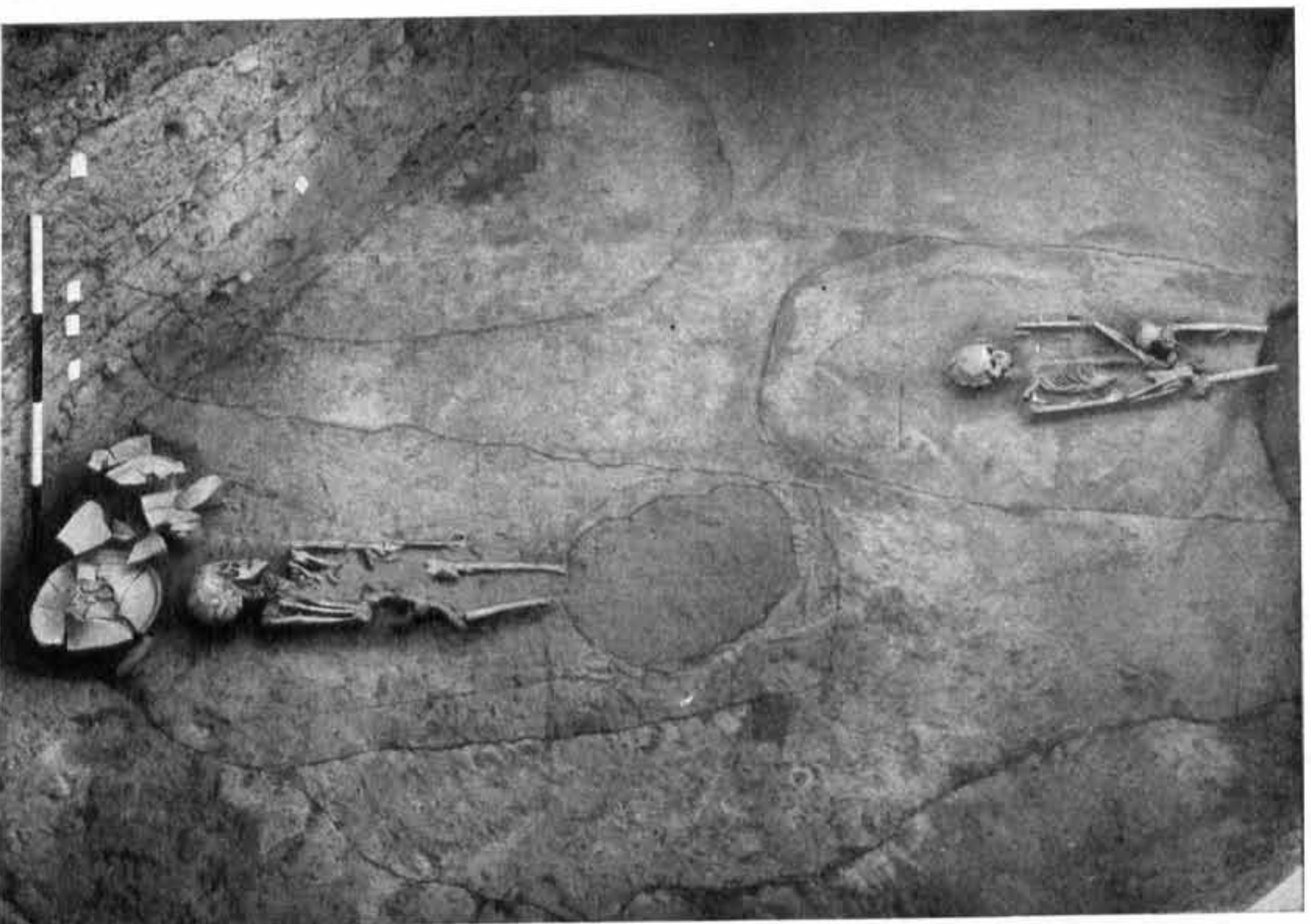
B



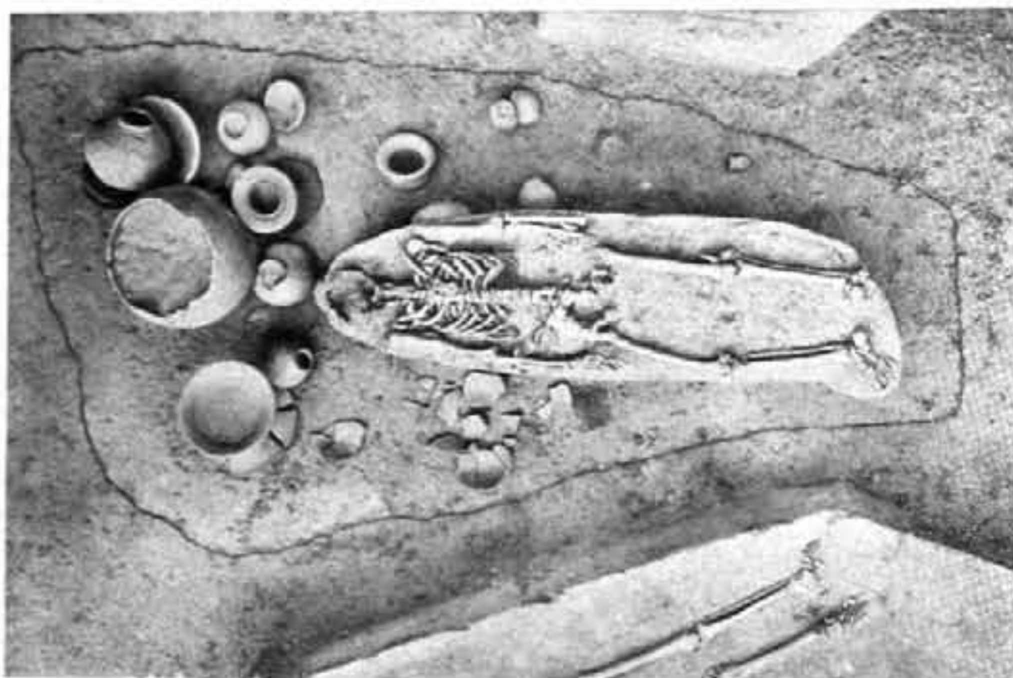
C

Nevasa : A, *sherd painted with a dog in black, Phase I;* B, *a burial-urn with a child's skeleton and bowls inside, Phase I;* C, *kaolin head of a smiling boy, Phase IV.* *See page 7*

PLATE VI



Rupar: Harappan burials disturbed by later pits. The nearer skeleton has a faience bangle on the left wrist. *See page 9*



A

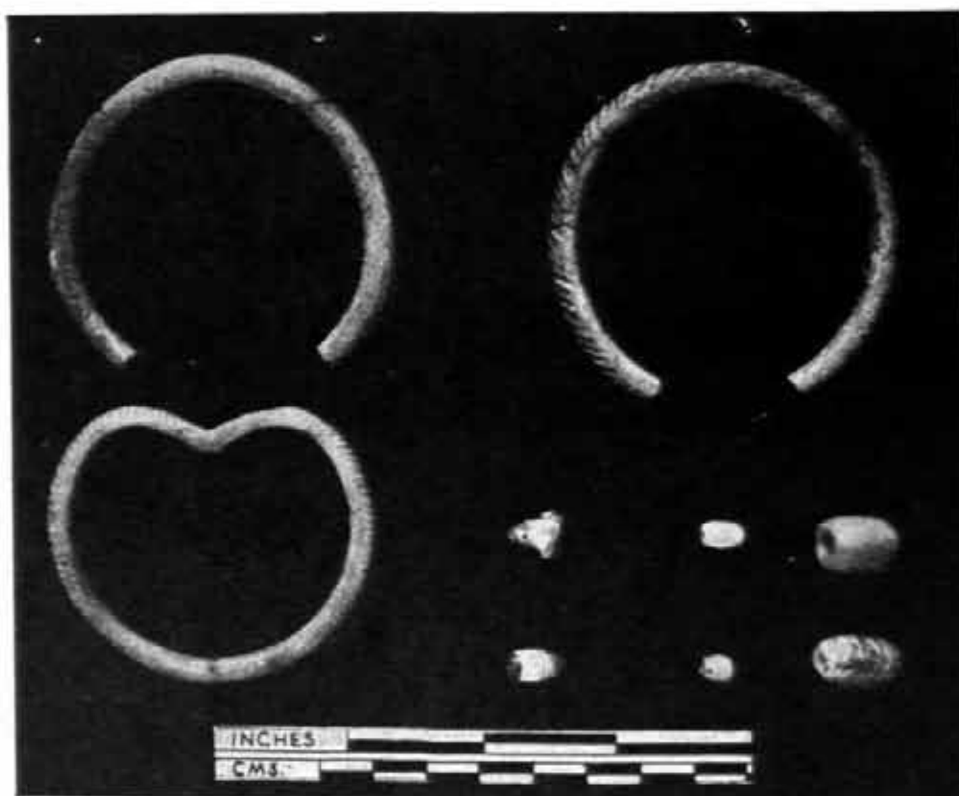


B

Rupar, a Harappan burial: A, *skeleton with associated pottery in situ, and* B, *pottery after the removal of skeleton.* *See page 9*

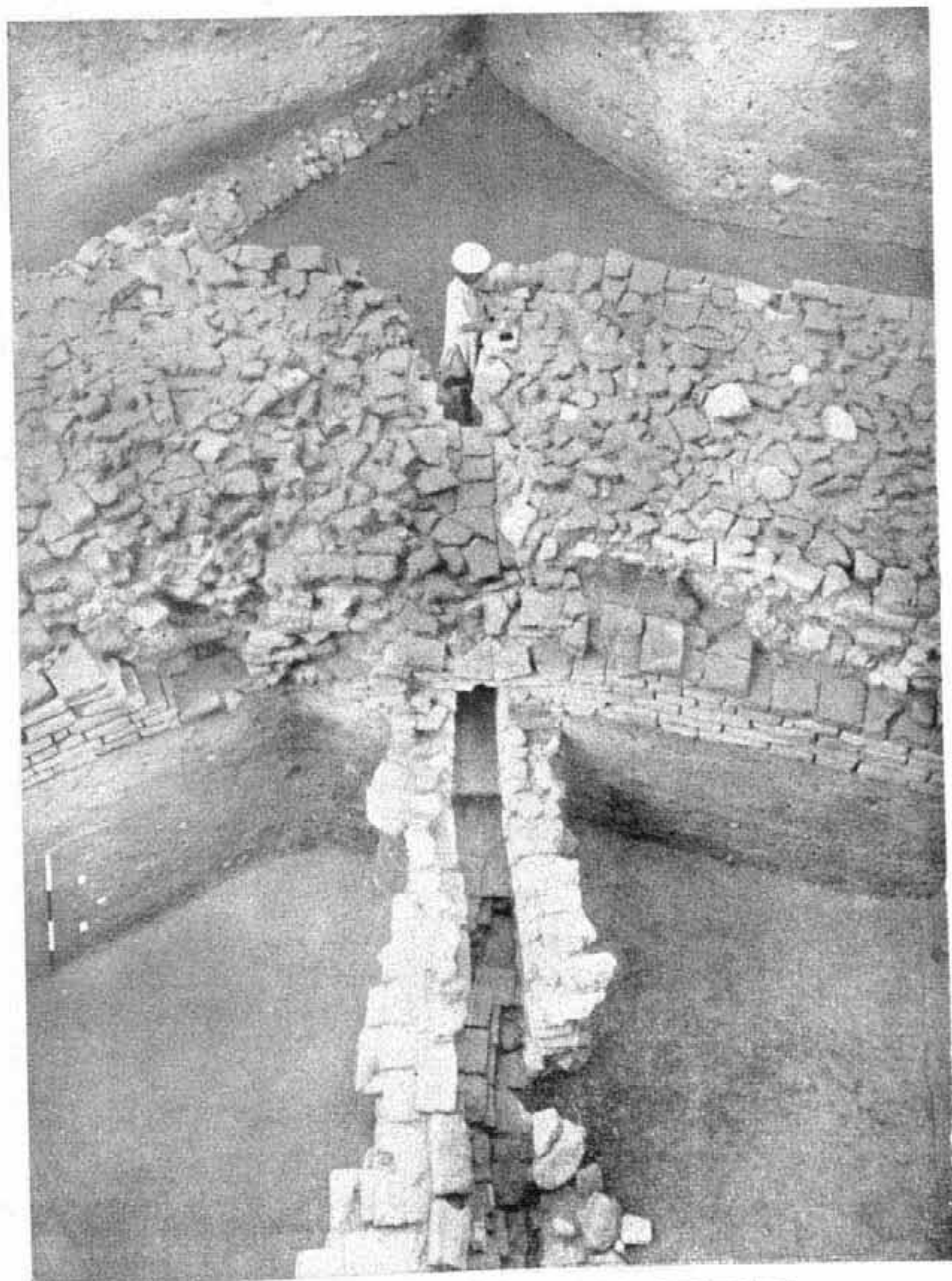
PLATE VIII





B

Rupar : A, pottery, and B, bangles and beads from Harappan burials. *See page 9*

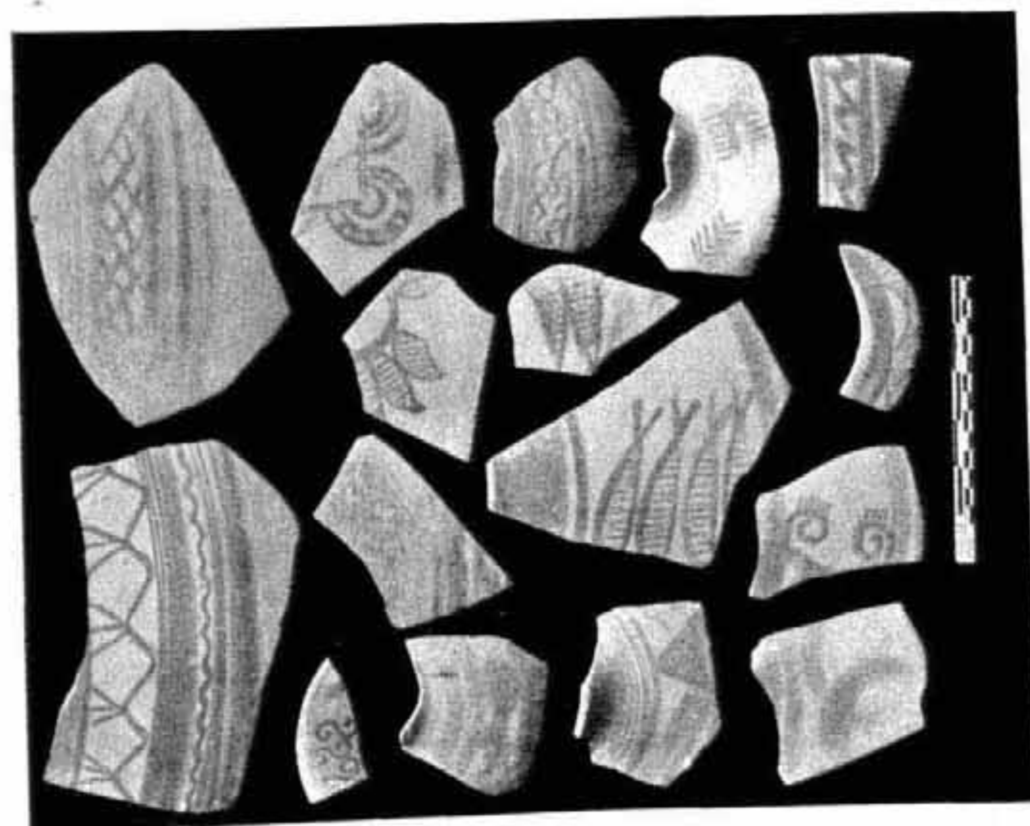


Rupar : retaining wall of a tank with its brick-built inlet, Pericd III. See page 9

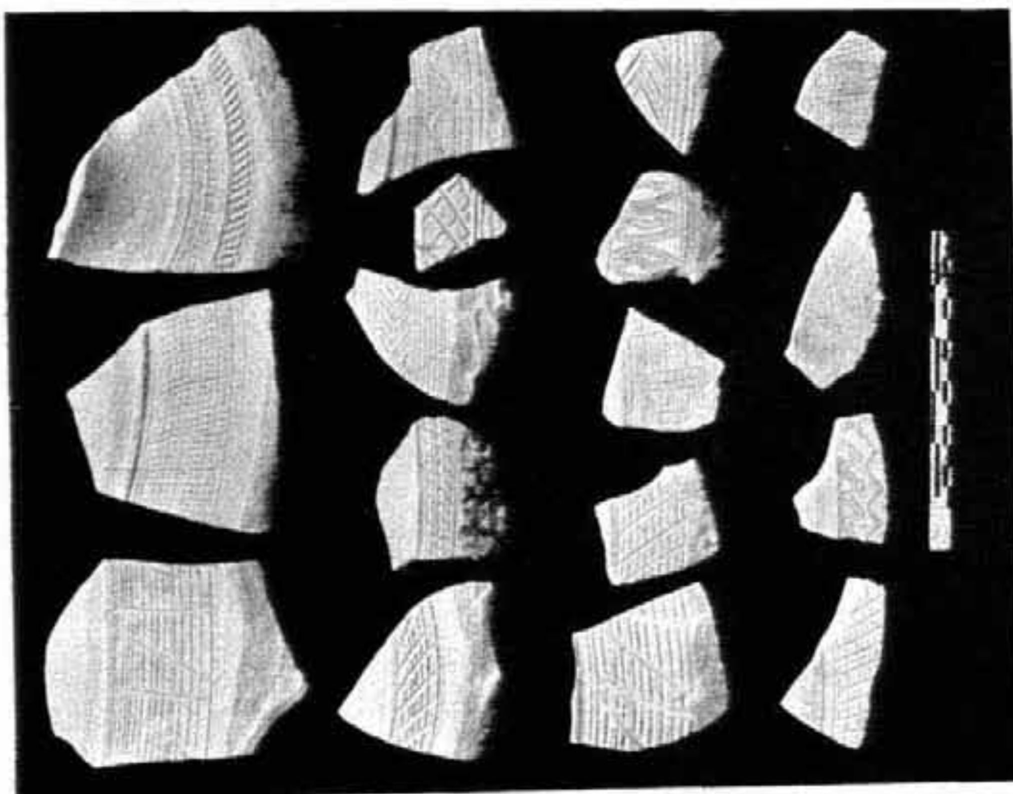
PLATE X



Bara: pottery-types. *See page 11*



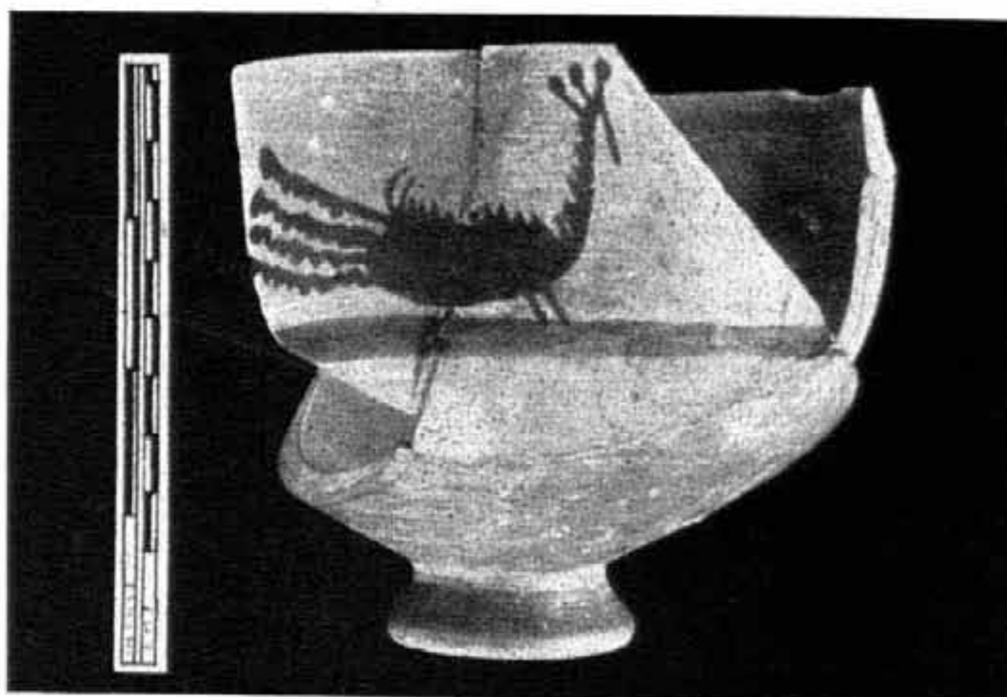
A



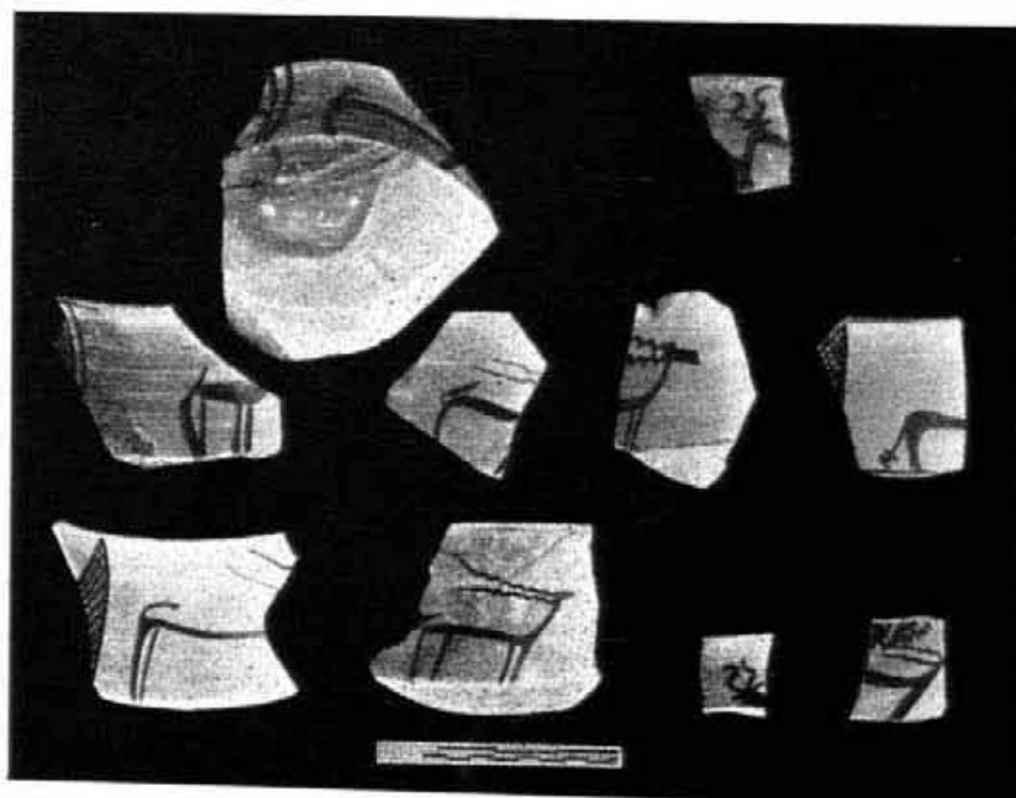
B

Bara, decorated pottery: A, *painted designs;* B, *incised designs.* *See page 11*

PLATE XII



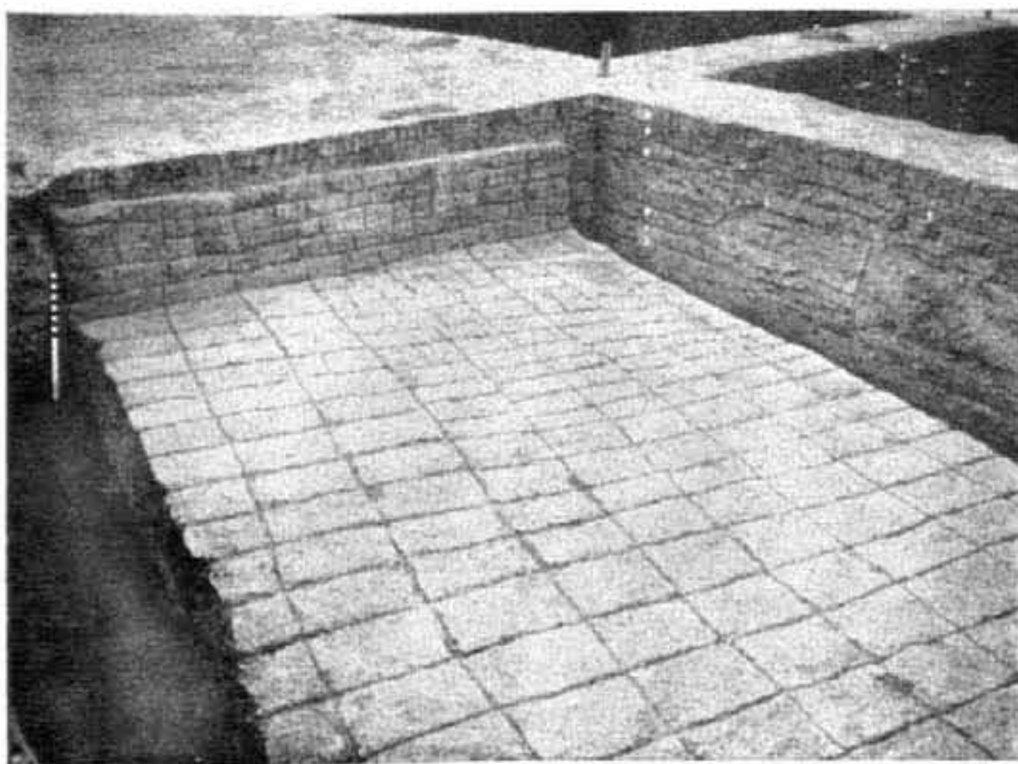
A



B

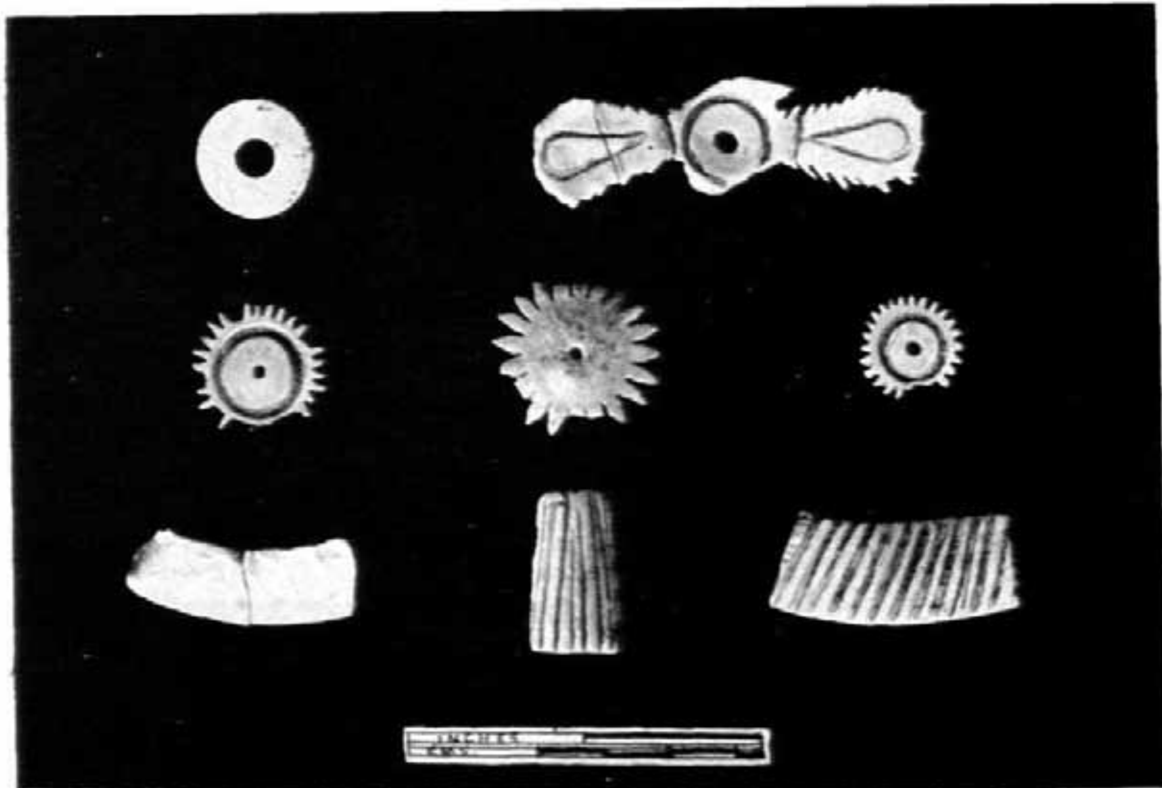
Rangpur, painted pottery: A, from Harappan, and B, from past-Harappan levels.
See pages 11 and 12



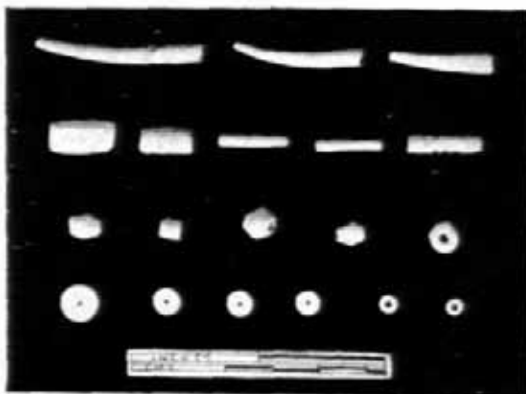


Lothal : mud-brick structures of the Harappa period. *See page 12*

PLATE XIV



A

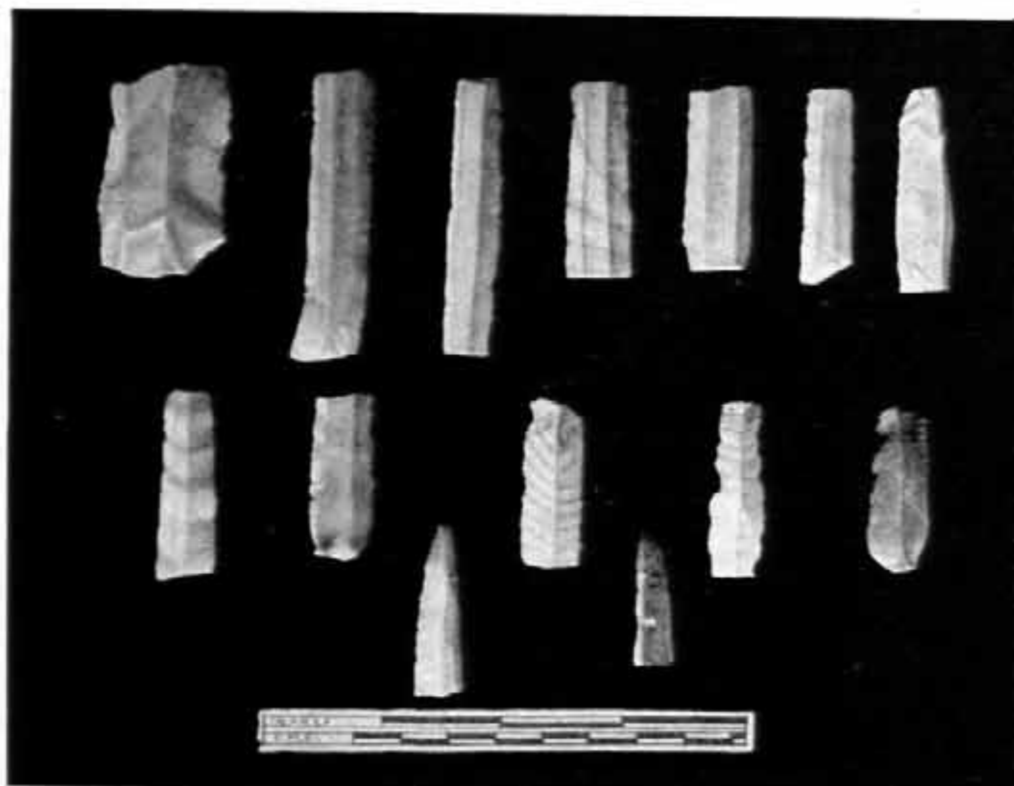


B



C

Lothal, objects of the Harappa period : A, steatite ornaments, B, steatite, faience and shell bead, and C, agate and carnelian beads. *See page 12*



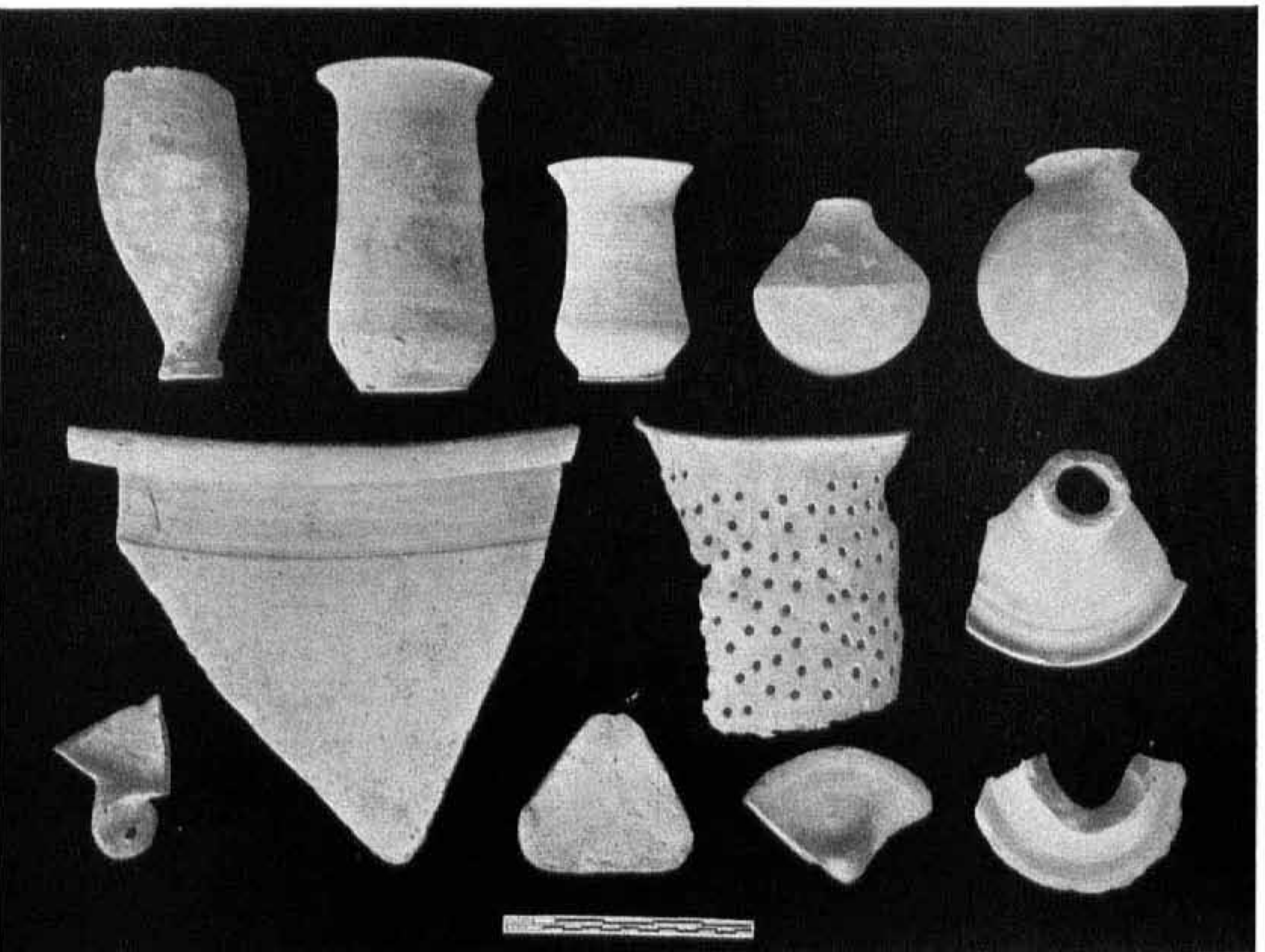
A



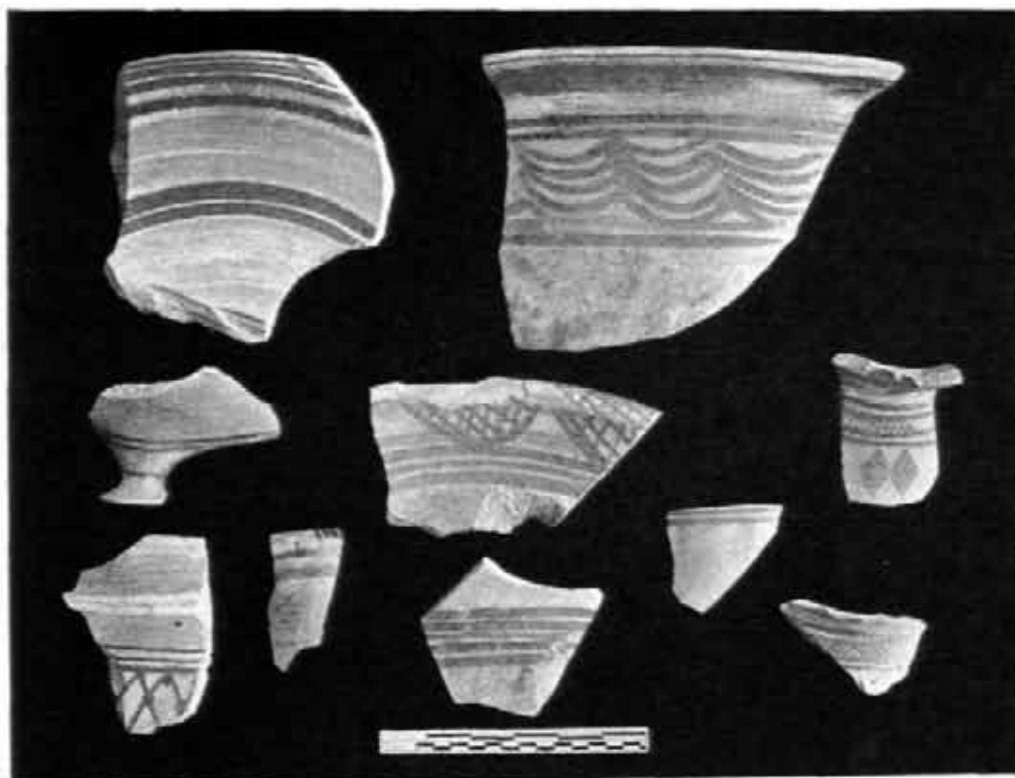
B

Lothal : A, *chert blades, and* B, *typical Harappa seals and sealings.* *See page 12*

PLATE XVI



Lothal: Harappa pottery and terracotta cake. *See page 12*



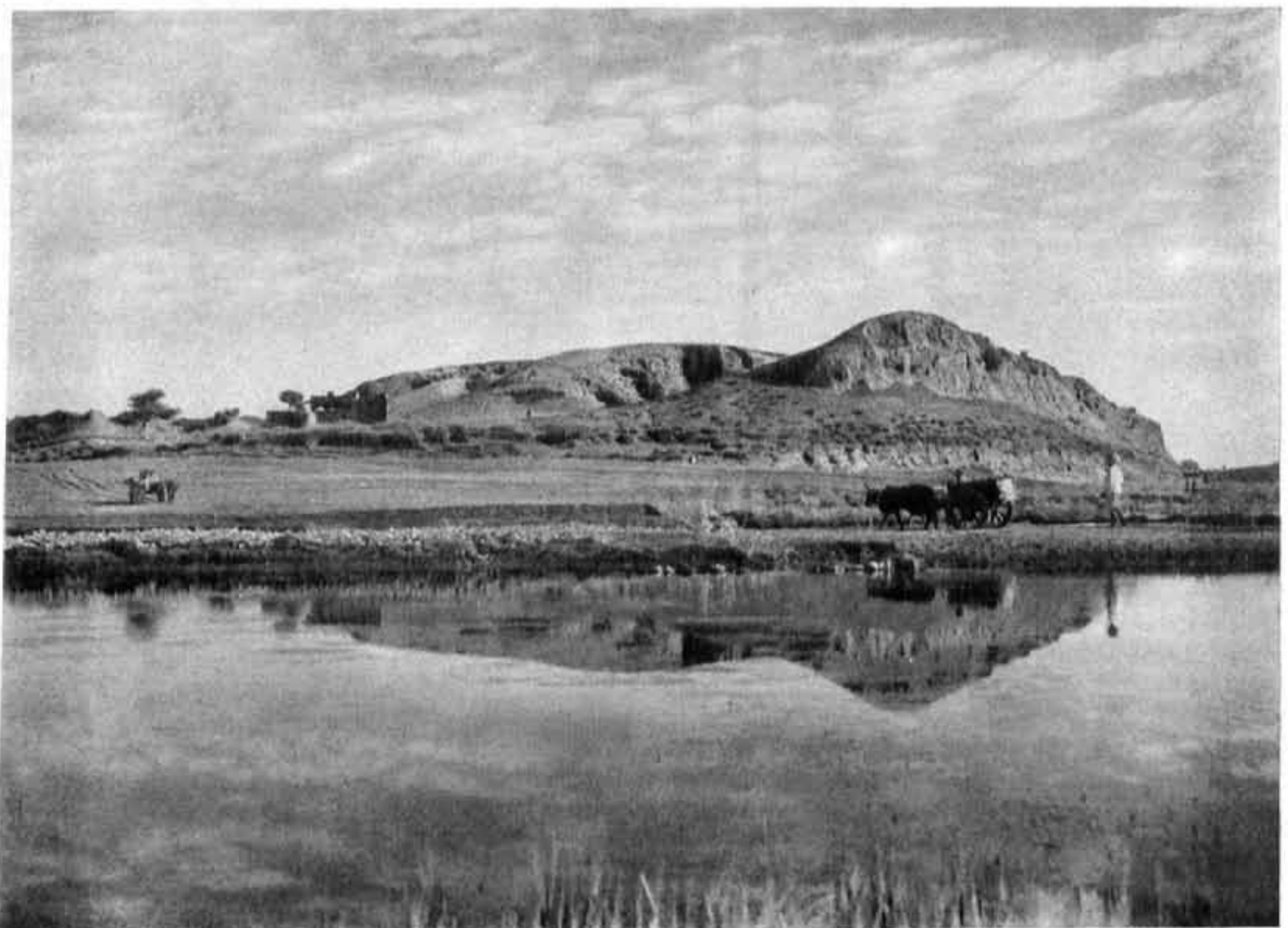
A



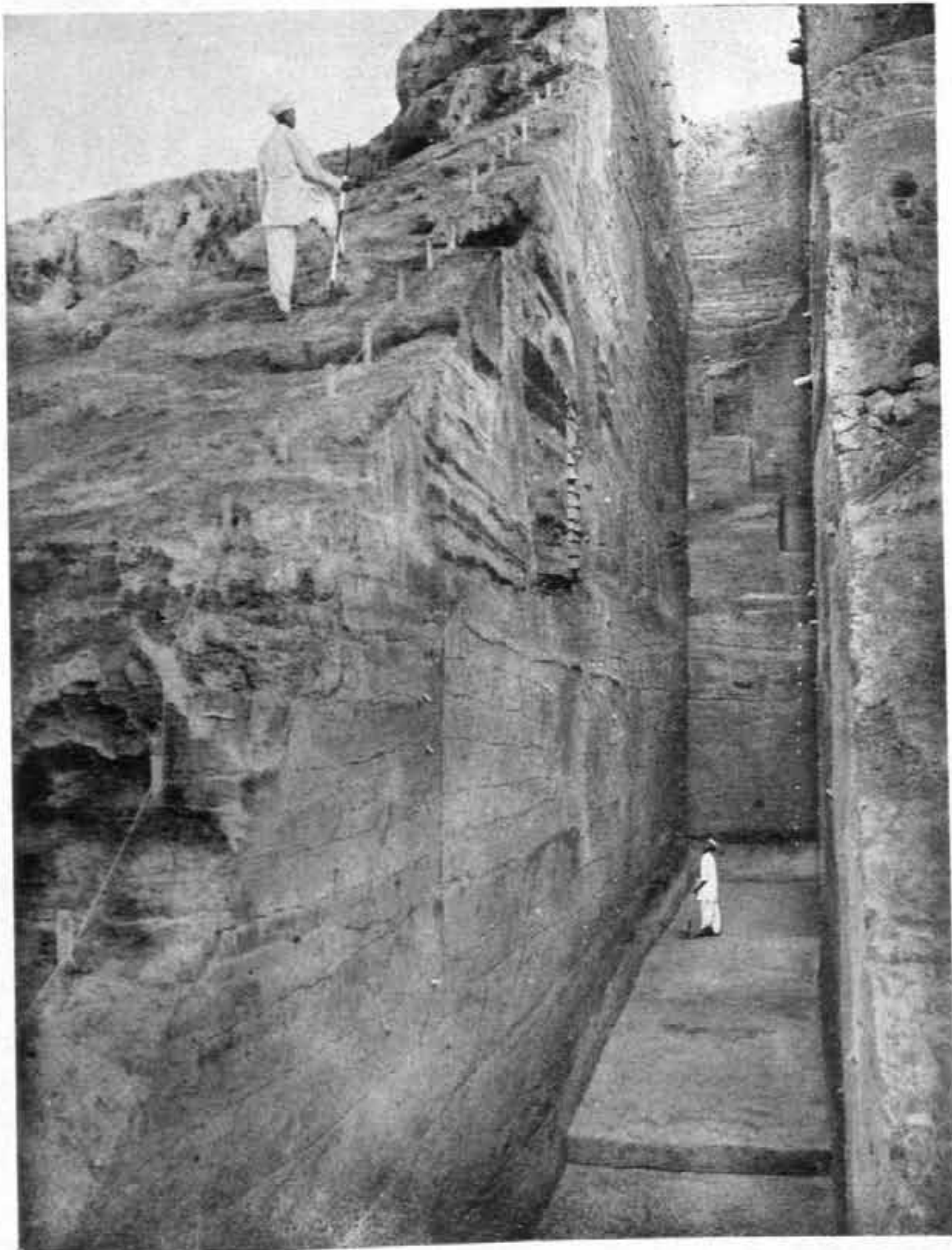
B

Lothal : A, *painted sherds, and* B, *jar possibly funerary, with bricks around.* *See page* 12

PLATE XVIII



The mound at Prakash, with the river Gomai in foreground. *See page 13*

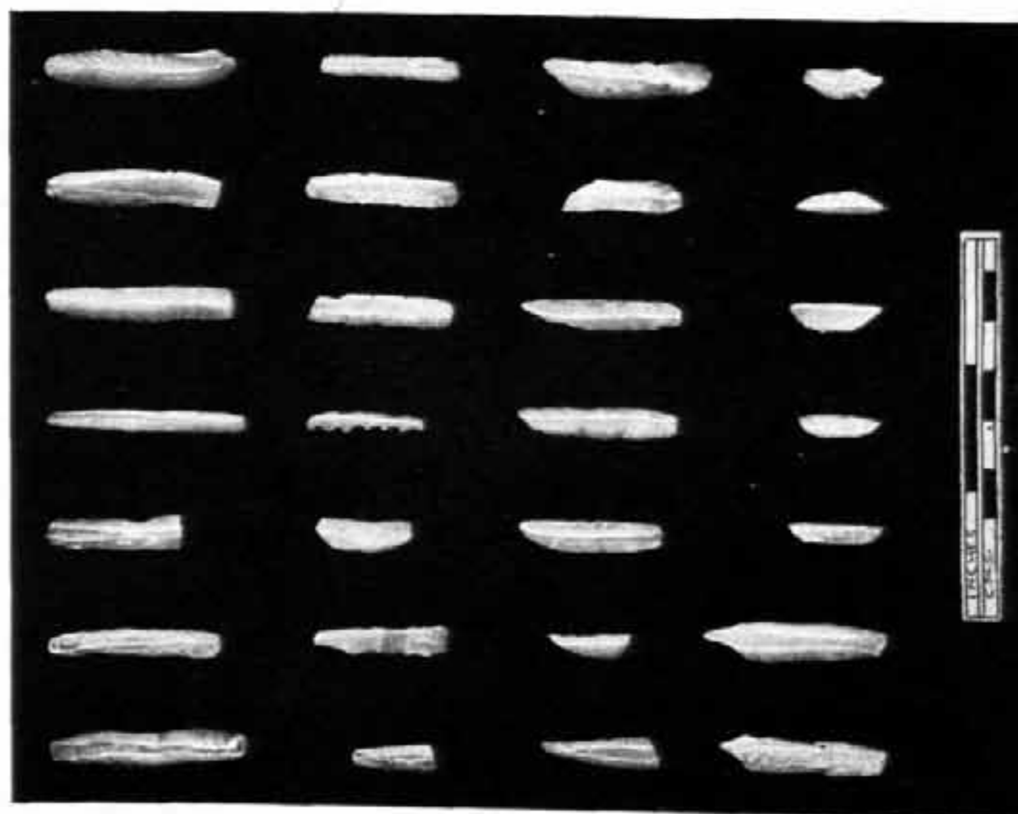


Prakash: general view of a deep cutting. *See page 13*

PLATE XX



B

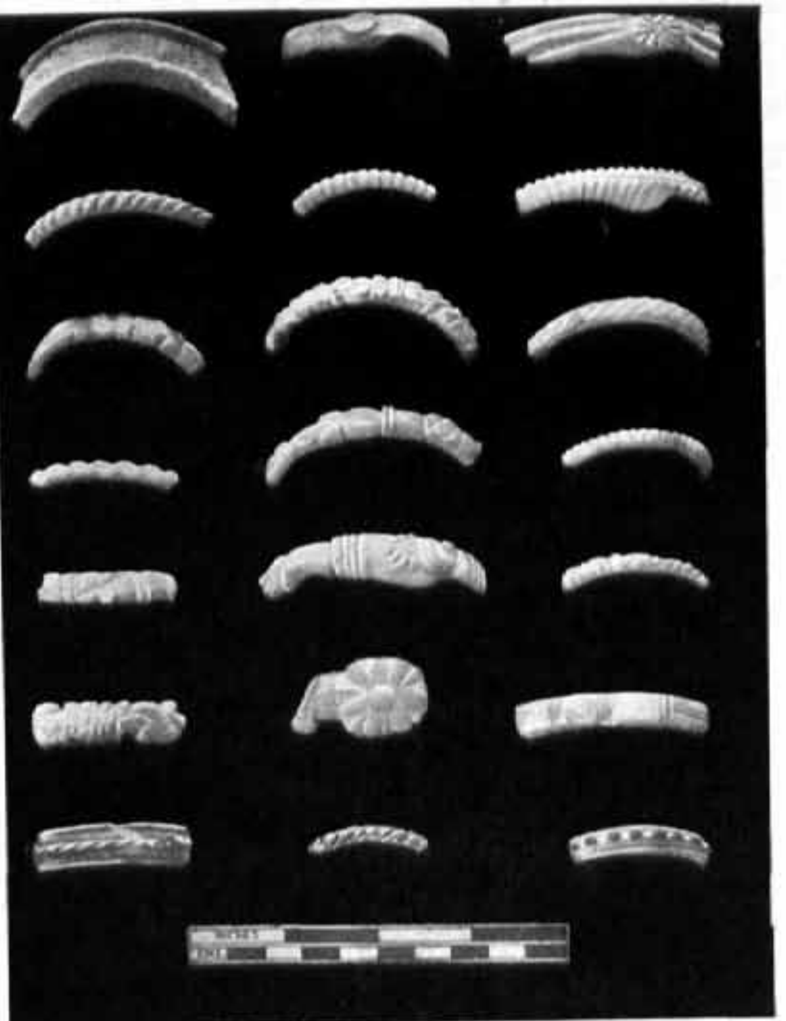


A

Prakash : A, microliths, and B, painted sherds from Period I. *See page 13*



A. *Prakash*: *soak-pit made of jars with truncated bases, Period II.* *See page 13*



B. *Prakash*: *shell and glass bangles, Periods III and IV.* *See page 13*

PLATE XXII



Prakash : miscellaneous objects of bone and semi-precious stones. *See page 13*

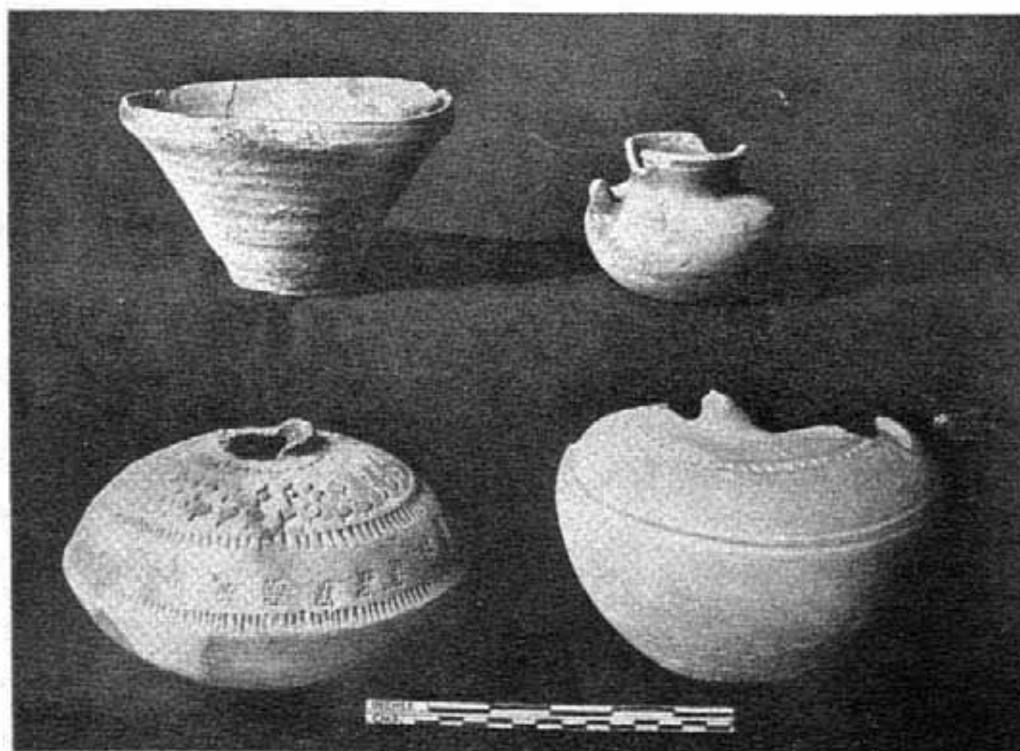


Purana Qila, New Delhi: a ring-well and structures, 500–200 B.C. *See page 14*

PLATE XXIV



A



B

Purana Qila, New Delhi : A, *structures of Kushan age, and* B, *Kushan pottery.* *See page 14*

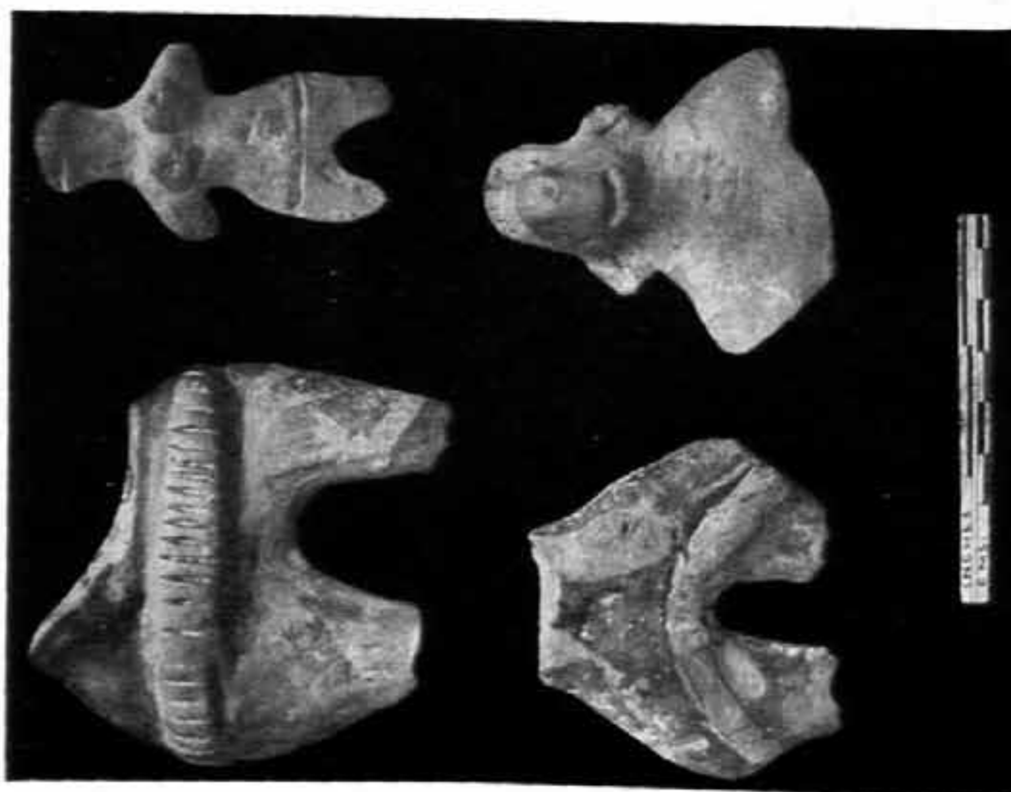


Ahar : earthern corn-bins and fire-places, late phase of Period I. *See page 15*

PLATE XXVI



B



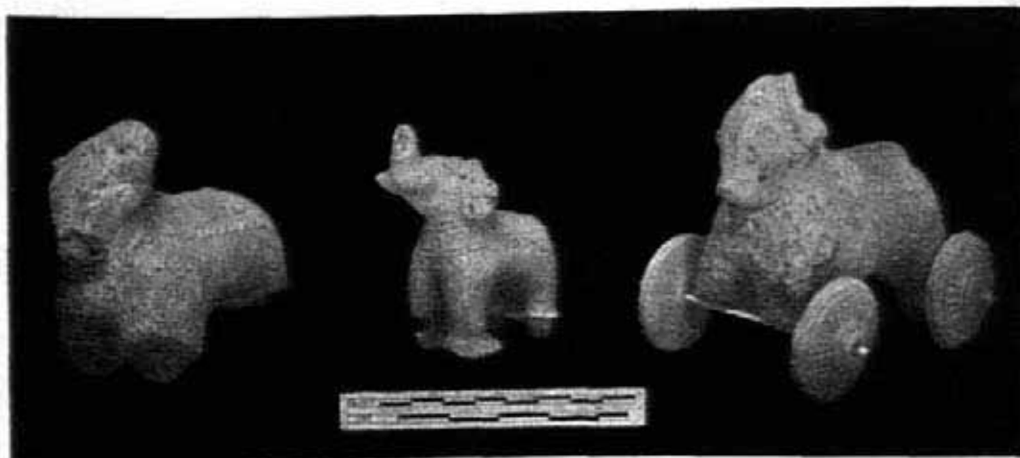
A

Mathura: A and B, terracotta figurines of different periods. *See page 15*

PLATE XXVII



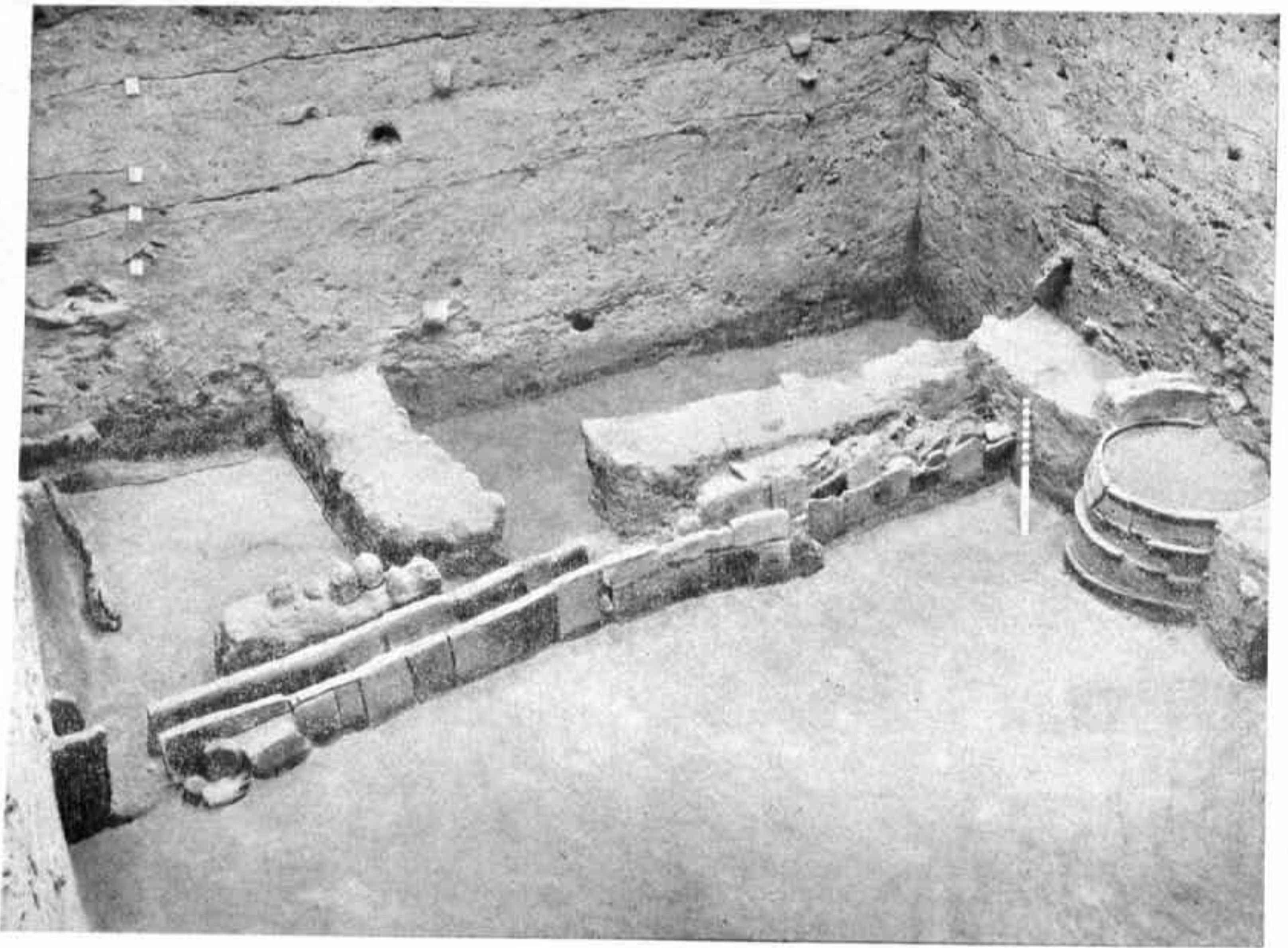
A



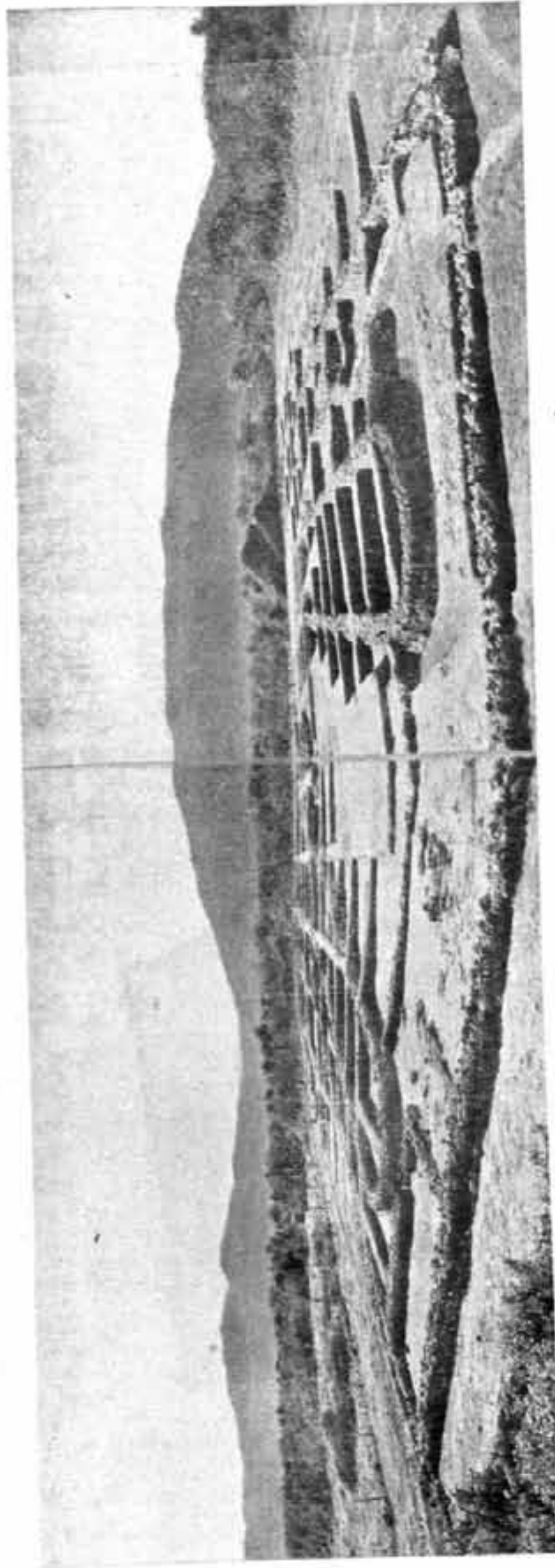
B

Mathura, terracotta figurines : A, *from Period III,* and B, *from Period II.* *See pages 15 and 16*

PLATE XXVIII



Mathura: a ring-well and brick-built drain, Period II. *See page 16*



Rajgir : *stone structures in the Jivakamravana area.* *See page 16*

PLATE XXX



Kausambi: passage between the northern flank of the eastern gateway and the southern boundary-wall of the Ghoshitarama monastery. *See page 16*



Kausambi: eastern gateway complex, showing three stages of the defences and the northern flank (in the foreground). See page 18

PLATE XXXII



B



C



A

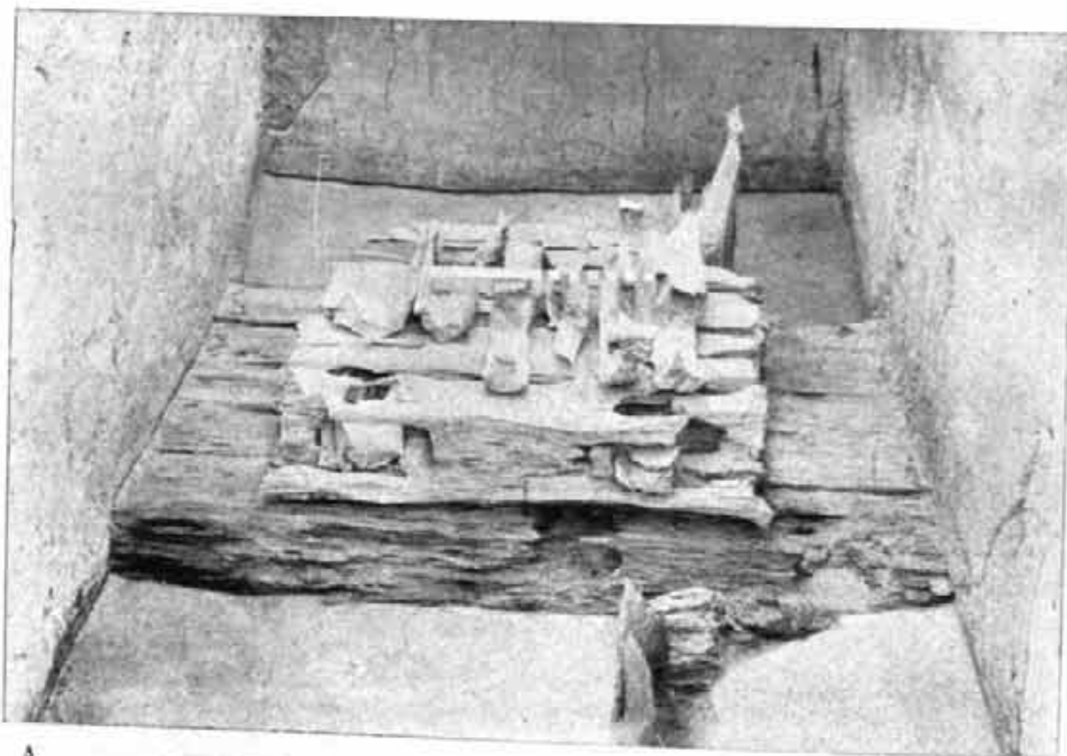
Kausambi : A, *terracotta plaque showing a warrior on a chariot ;* B, *impressions of a seal of Hunaraja ;* C, *seal-impression of Dhruvadatta.* *See page 18*

PLATE XXXIII

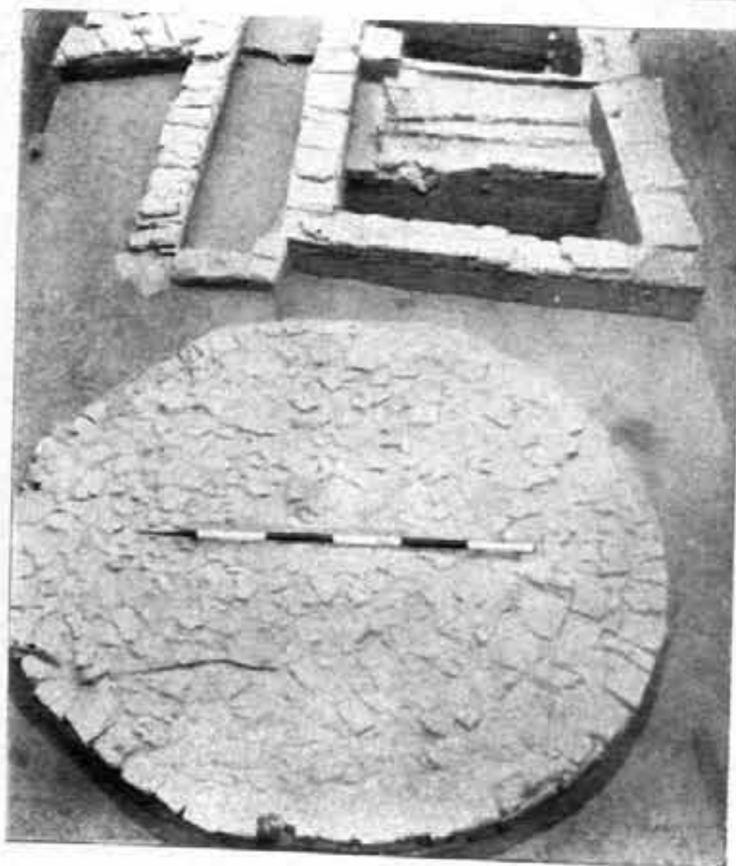


Kausambi : fragment of a decorated purnaghata. *See page 18*

PLATE XXXIV



A



B

Kumrahar : A, *wooden platform in the palace-area, and* B, *circular brick platform and other structures in the monastery-area.* *See page 19*



A. *Kumrahar : circular structure within a building in the monastery-area.* *See page 19*



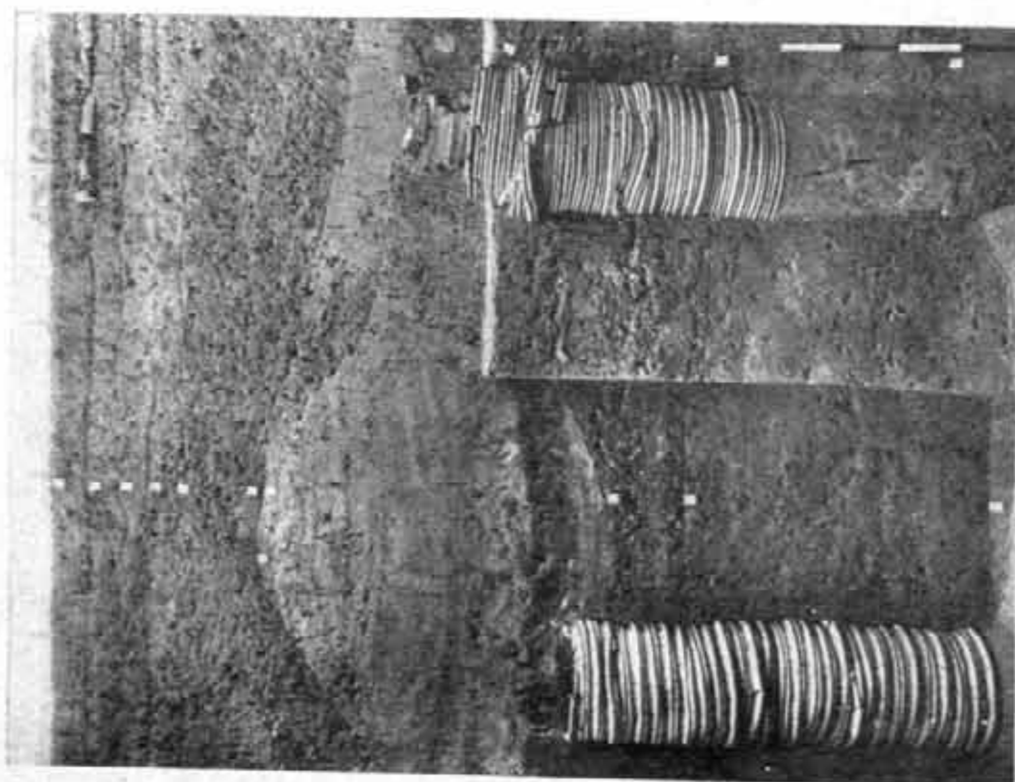
B



C

B *and* C. *Tildah : terracotta figurines.* *See page 23*

PLATE XXXVI



B



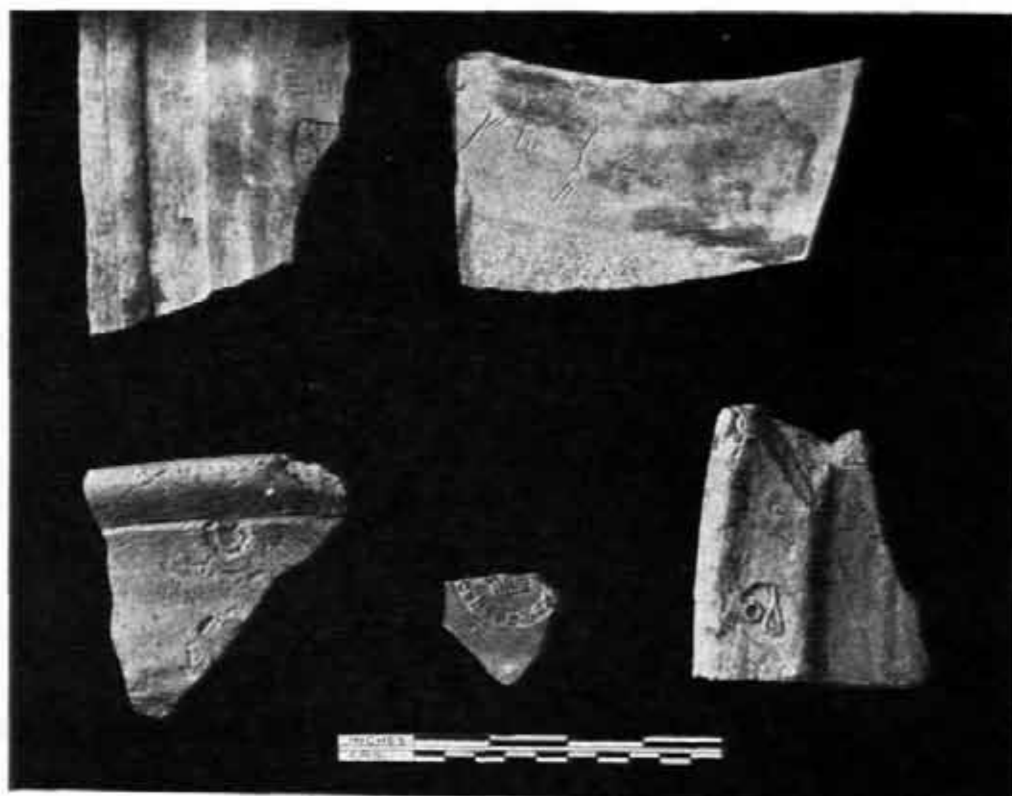
A

Tamluk : A, *stepped wall of a tank, and* B, *ring-lined soak-wells, Period III*. *See page* 20



Tamluk: rouletted ware, Period III. *See Page 20*

PLATE XXXVIII



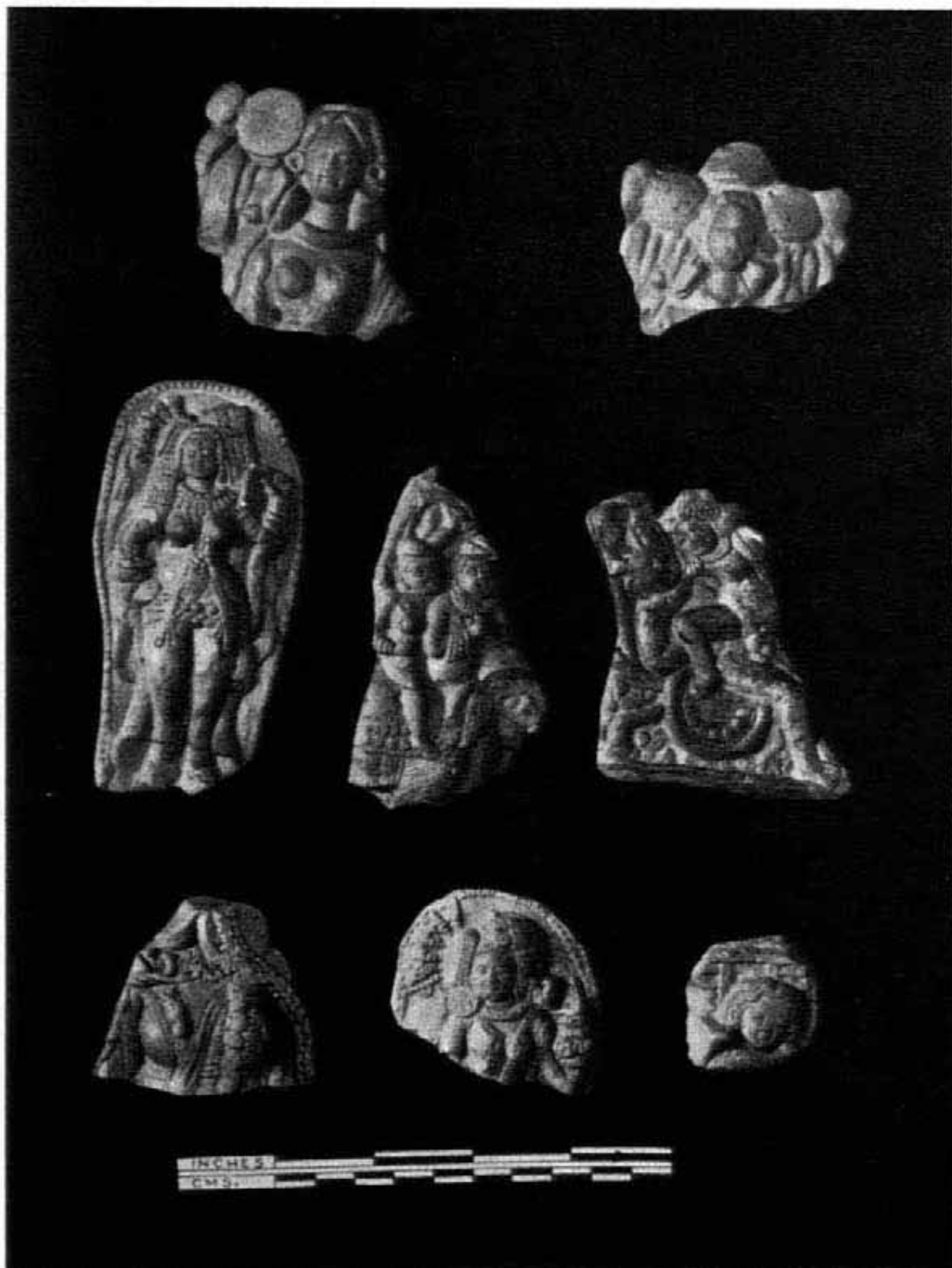
A



B

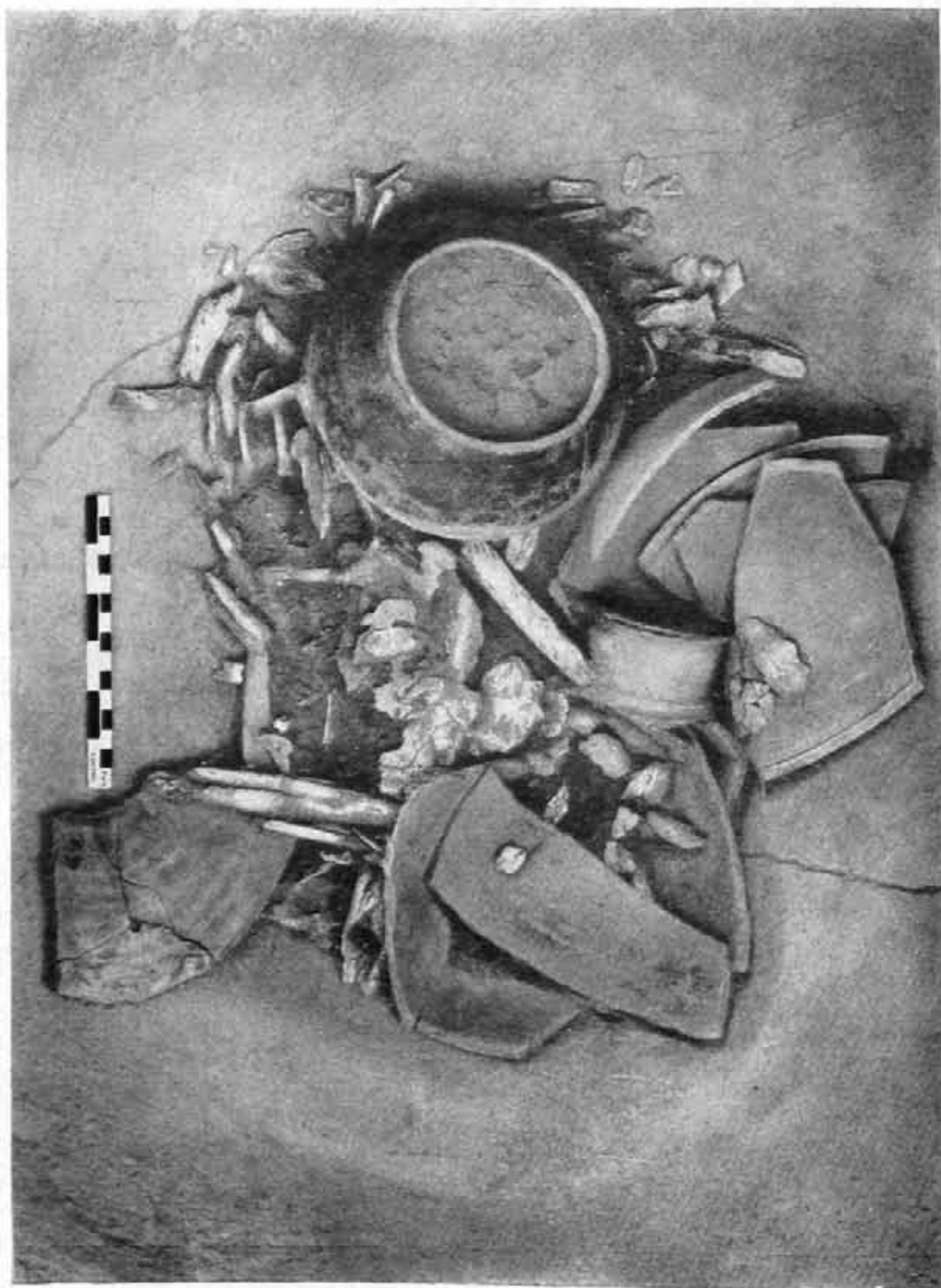
Tamluk : A, inscribed and stamped sherds, and B, terracotta figurines, Period IV. *See page 20*

PLATE XXXIX

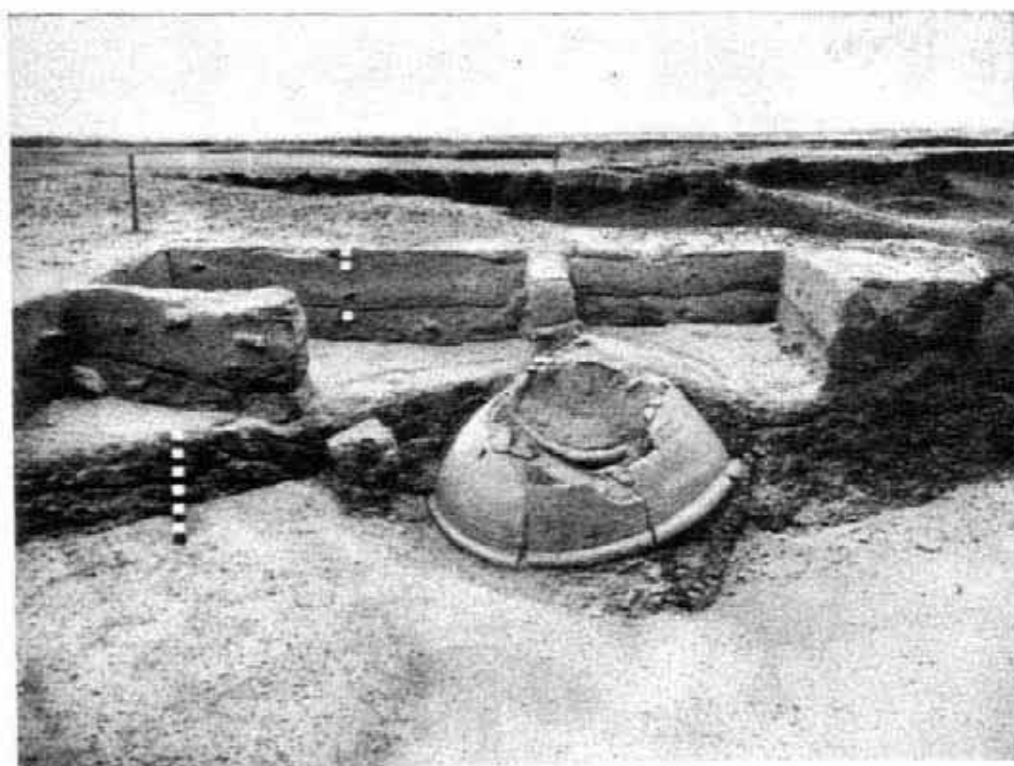


Tamluk: terracotta figurines, Period II. *See page 20*

PLATE XL



Amirthamangalam : skeletal and pottery contents of a broken burial-urn of the roadside. *See page 20*



A

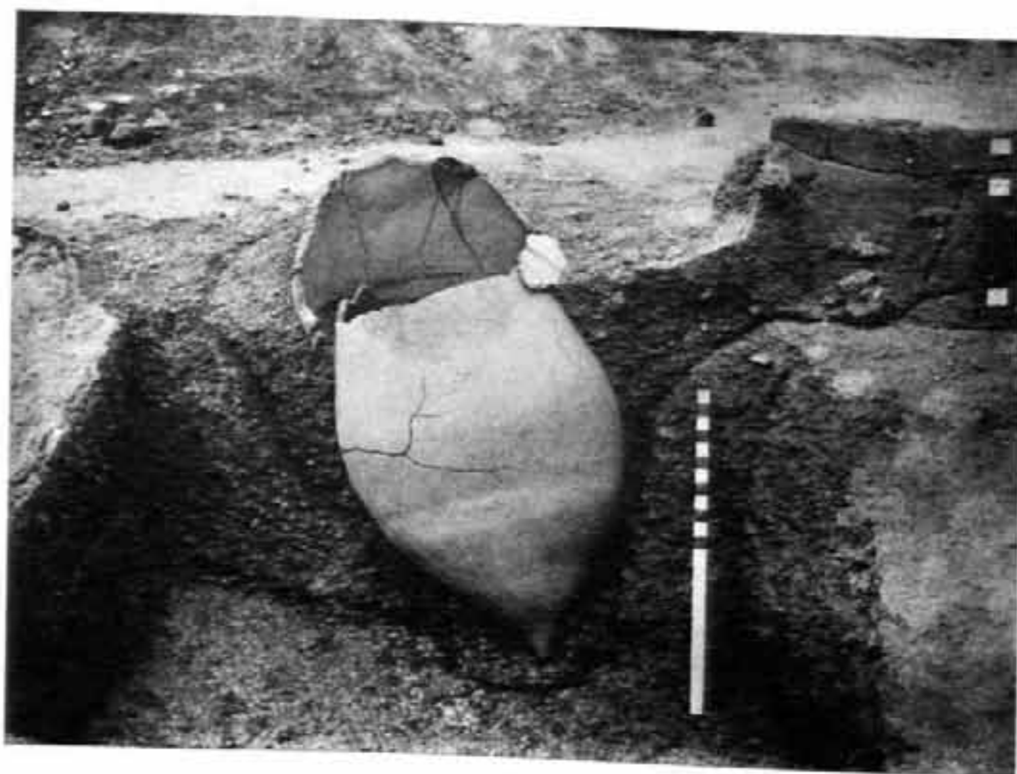


B

Amirthamangalam: A, *a burial-urn with lid, and* B, *the same, after the removal of the lid.*
See page 20

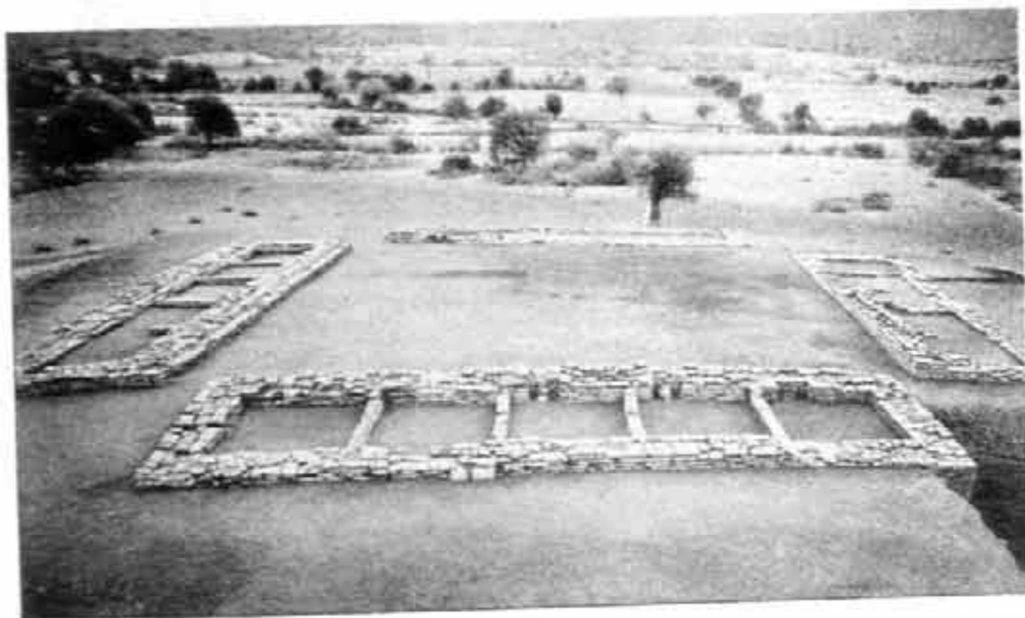


A

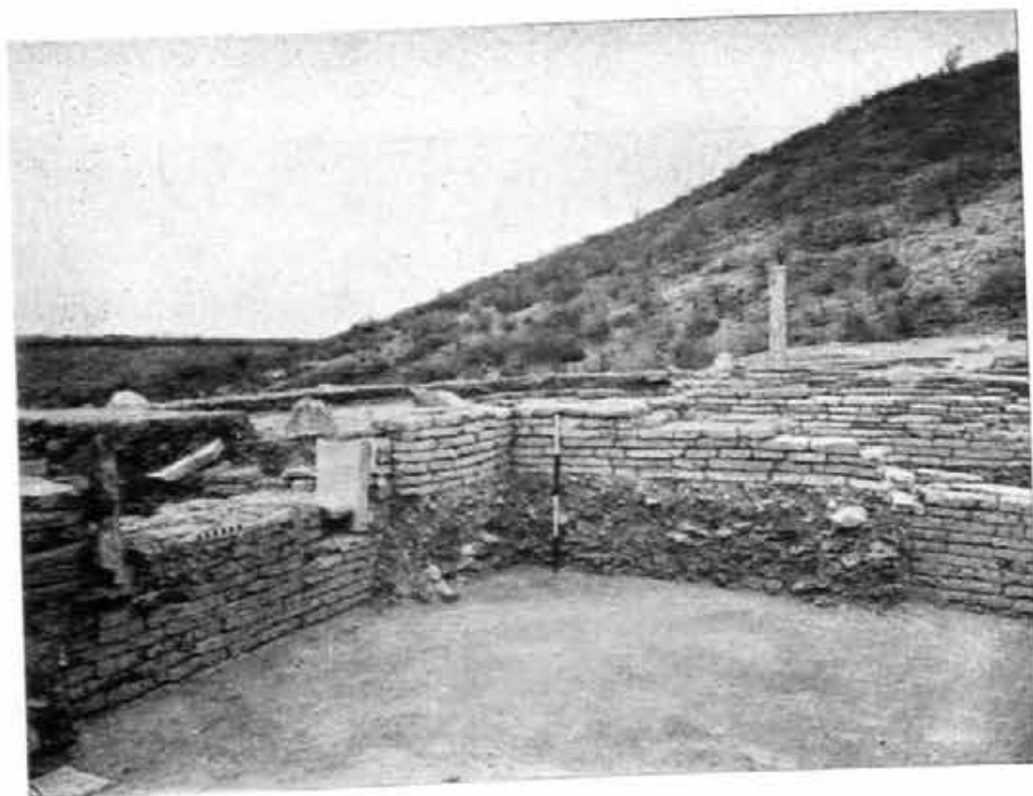


B

Amirthamangalam : A, *the same urn as on pl. XLI, showing skeletal and pottery contents ;* B, *a damaged burial-urn with a pedunculated bottom.* *See pages 20 and 22*



A



B

Nagarjunakonda : A, *monastery in Site I, and* B, *shrine-chamber of two periods in Site VII.*
See pages 22 and 23

PLATE XLIV



A



B

Nagarjunakonda : A, *mahachaitya in Site V, built upon an earlier one, and* B, *mahachaitya adjoining Site VI.* *See pages 22 and 23*



A



B

Nagarjunakonda : part-views of the quadrangle at the foot of the Hariti temple. See page 22

PLATE XLVI



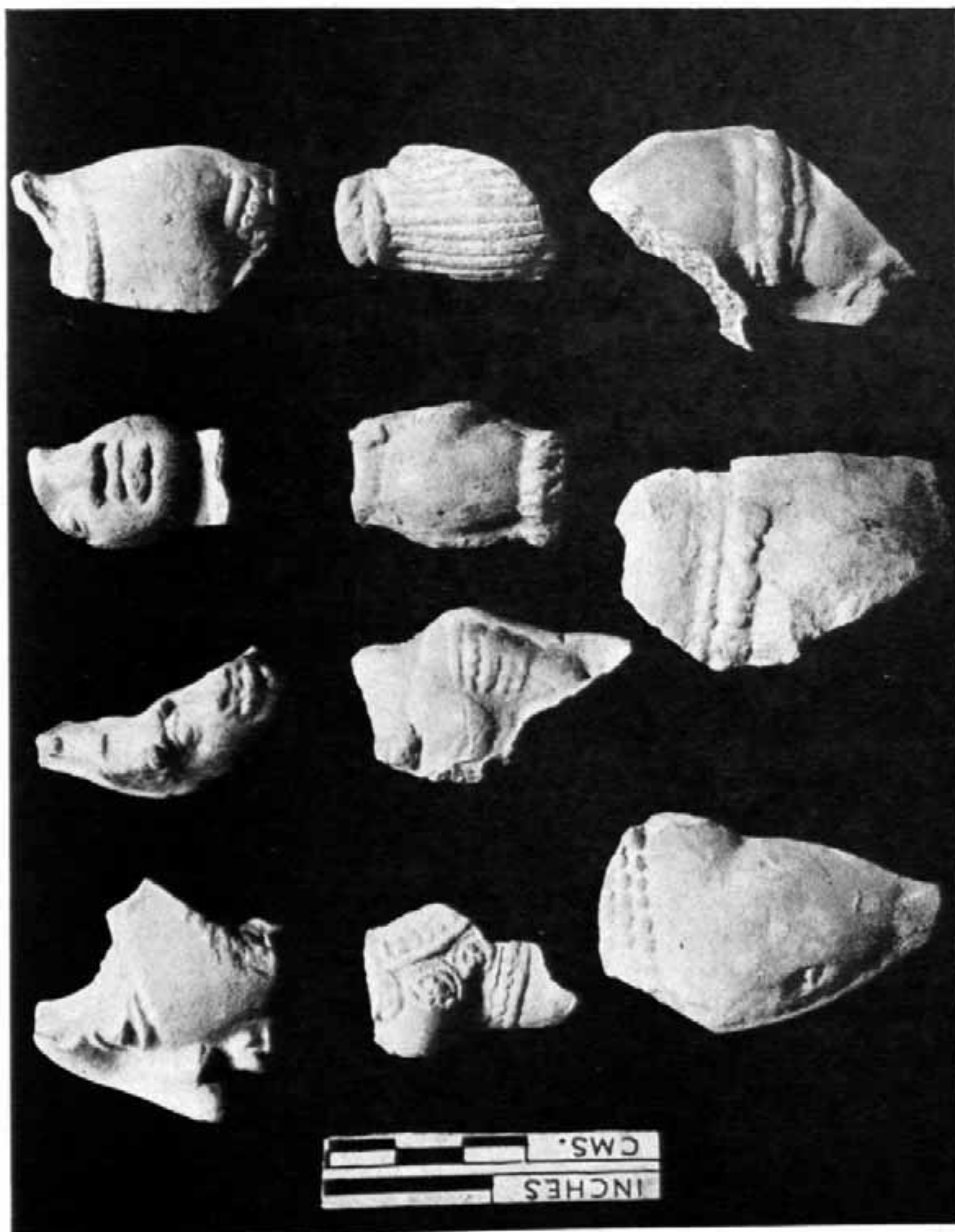
A



B

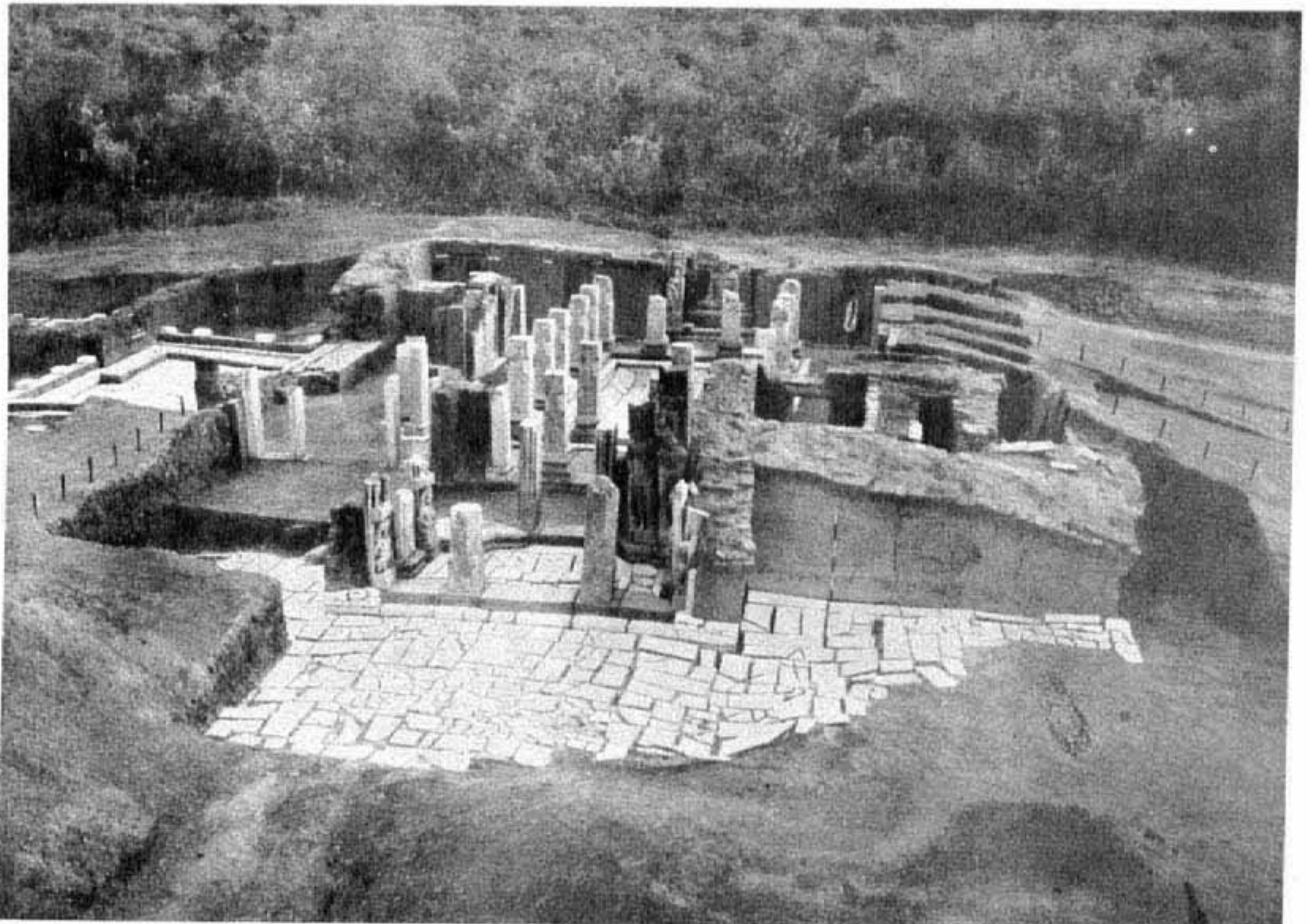
Nagarjunakonda : A, *limestone head of Bodhisattva, and* B, *inscribed pillar from Site VII.* *See page 23*

PLATE XLVII



Nagarjunakonda : fragments of terracotta figures. *See page 23*

PLATE XLVIII



Sirpur: Main Temple. See page 24



A



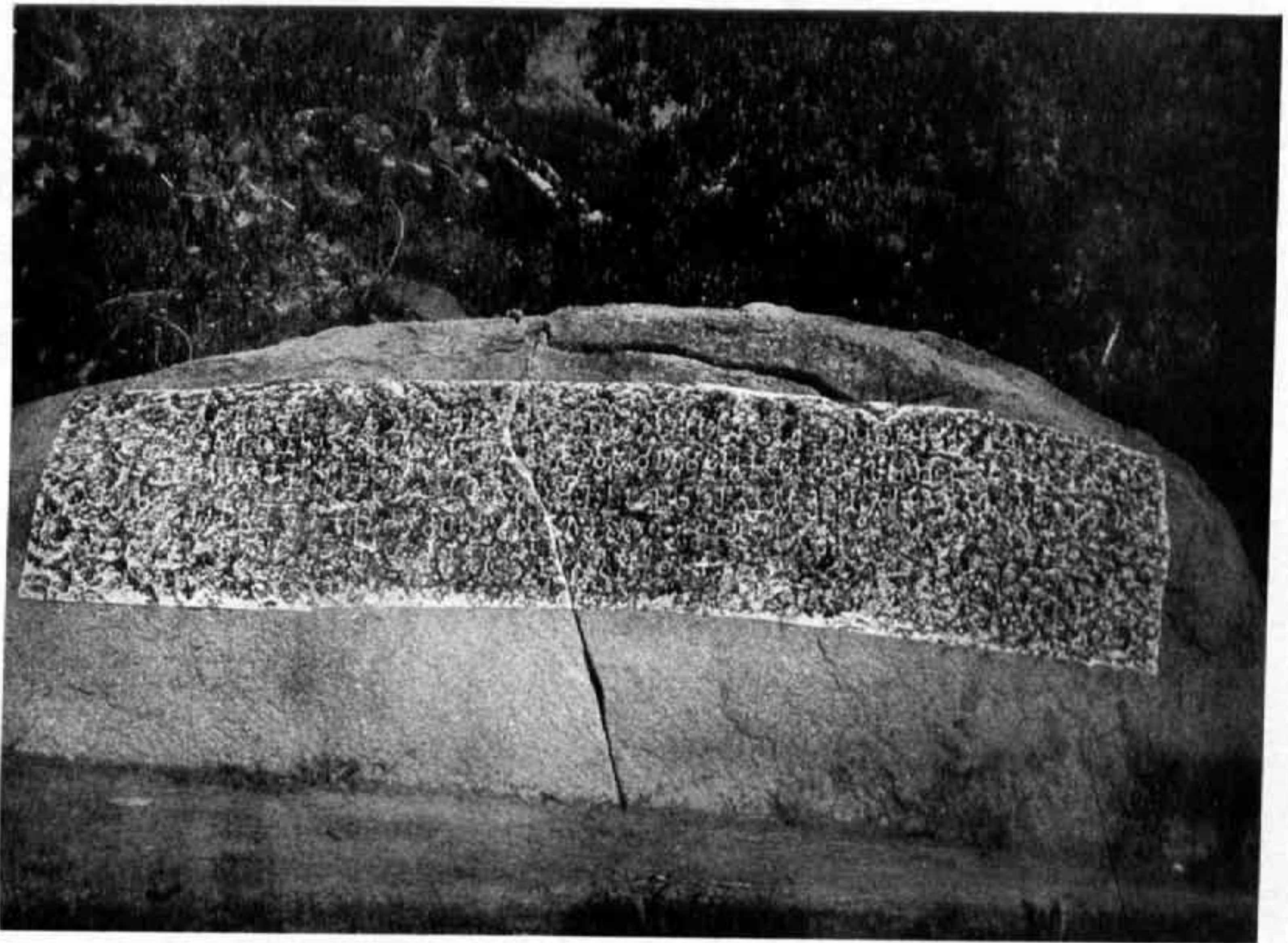
B



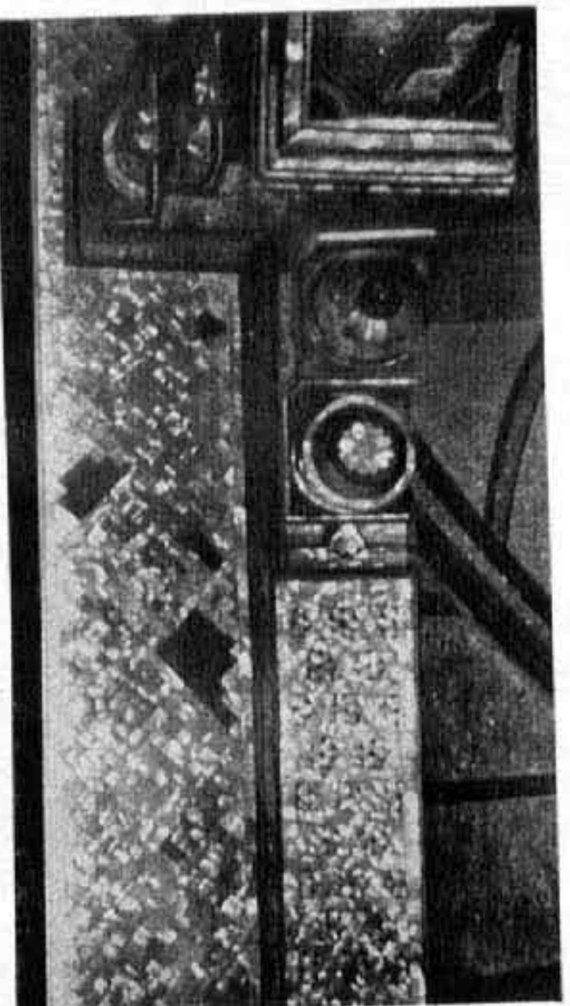
C

Sirpur : A, *statue of Buddha in the Main Temple*, B, *terracotta seals, and* C, *copper plaque engraved with Buddhist texts.*
See pages 24 and 26

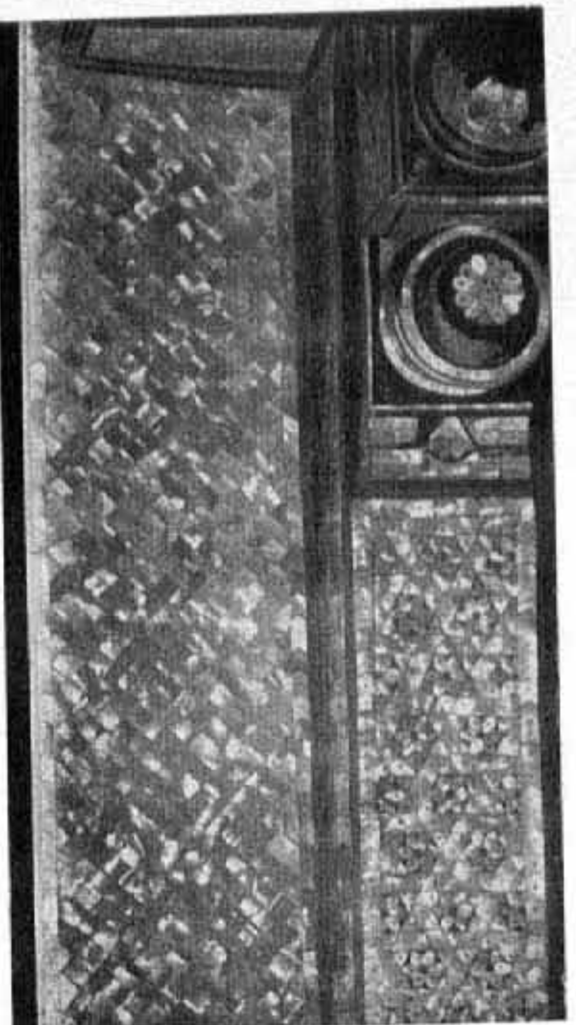
PLATE I.



Gujarra: Rock-edict of Asoka. *See page 27*



A



B

Fatehpur Sikri, mother-of-pearl inlay in the canopy in Dargah Sheikh Salim Chishti : A, *before restoration, and* B, *after restoration, of missing inlay-pieces.* *See page 33*

PLATE LII



A



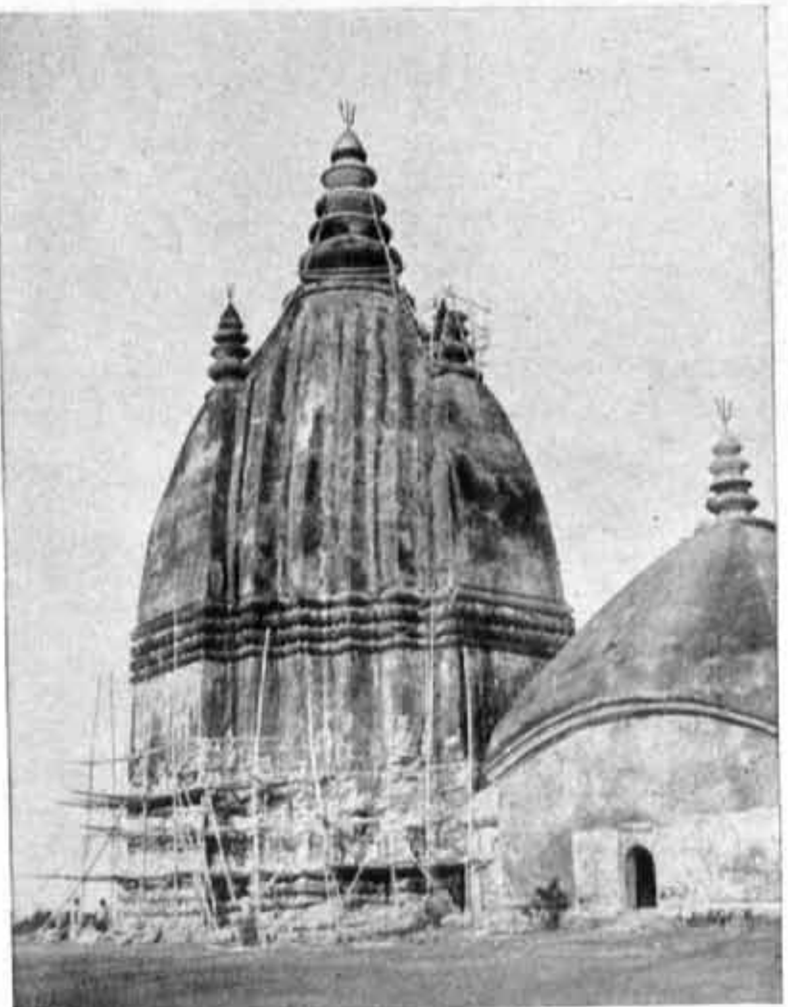
B

Rajgir, fortification-wall with bastion near the Banganga : A, *before repairs, and* B, *after repairs.* *See page 34*

PLATE LIII



A



B

Sibsagar, Sibdol temple : A, *showing earthquake-damages, and* B, *repairs in progress* (*the golden pinnacle has been restored on the top*).

See page 36

PLATE LIV



A



B

Golconda fort : A, *before repairs, and* B, *during repairs.* *See page 37*



A



B

Gangaikondacholapuram, Brihadisvara temple : A, *before clearance, and* B, *after clearance, of accretions in the compound.* *See page 39*

PLATE LVI

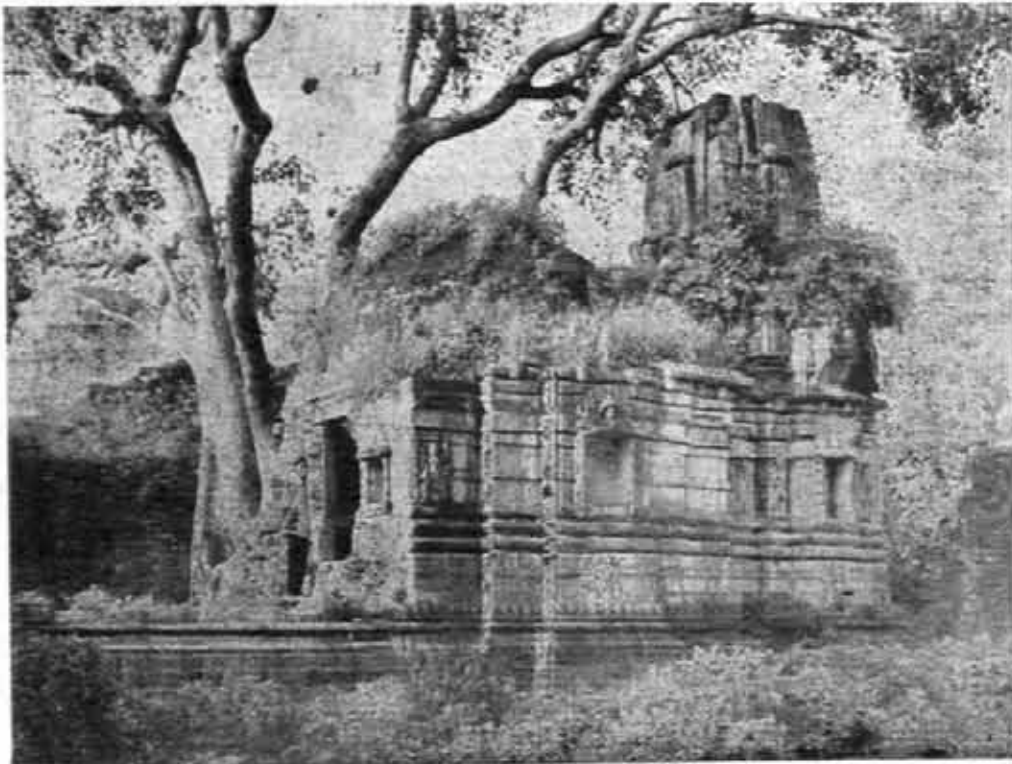


A



B

Gangaikondacholapuram, double-storeyed cloister in Brihadisvara temple : A, *before repairs, and* B, *after repairs.* *See page 39*



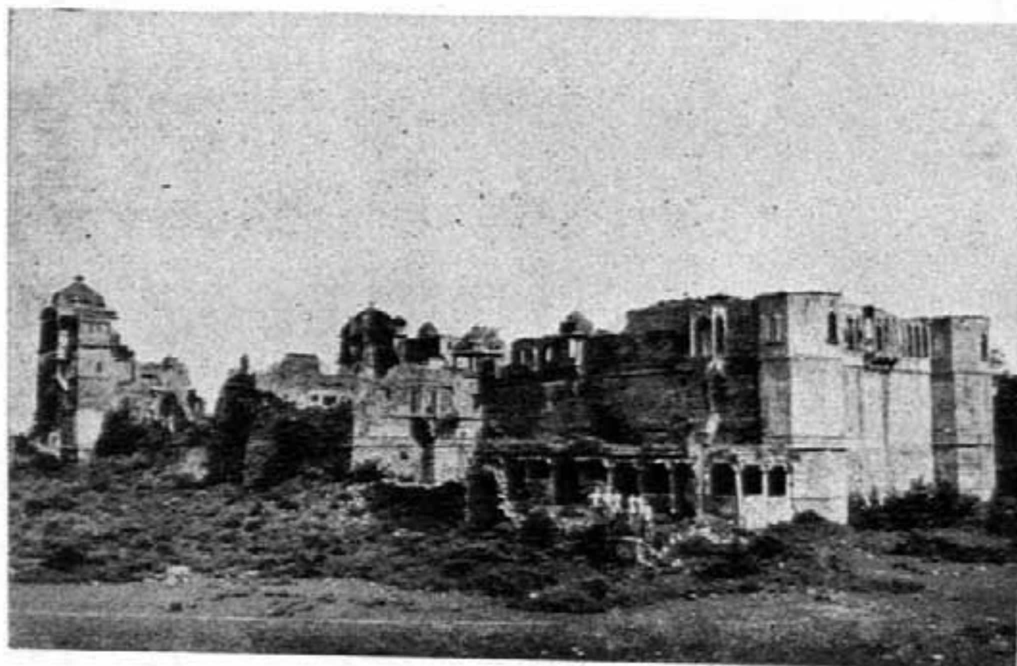
A



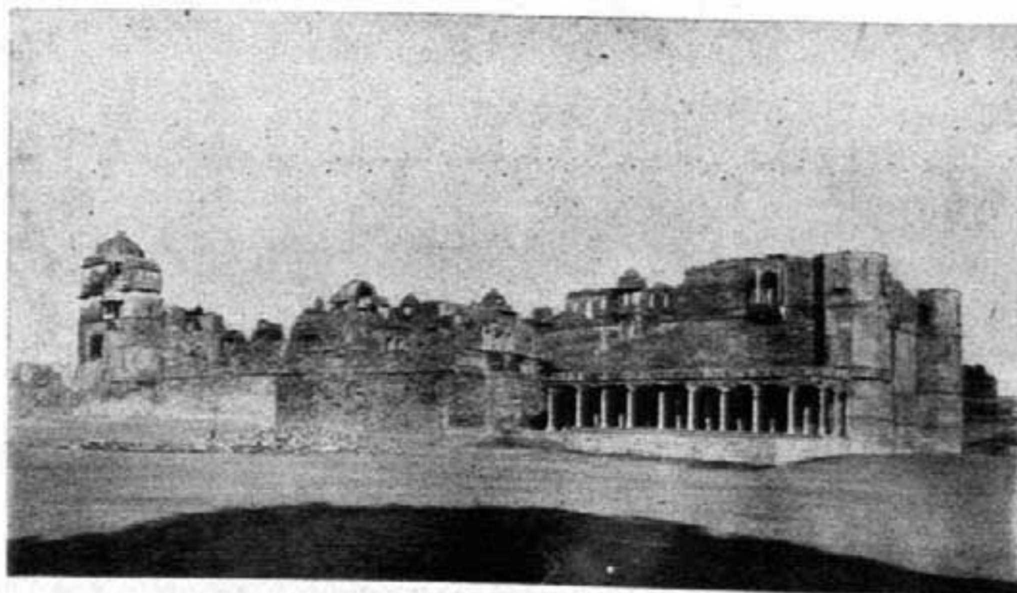
B

Chitor fort, Sringar Chauri temple : A, *before repairs, and* B, *after repairs.* *See page 43*

PLATE LVIII



A



B

Chitor fort, Rana Kumbha's palace and Diwan-i-Am : A, *before repairs, and* B, *after repairs.*
See page 43



A



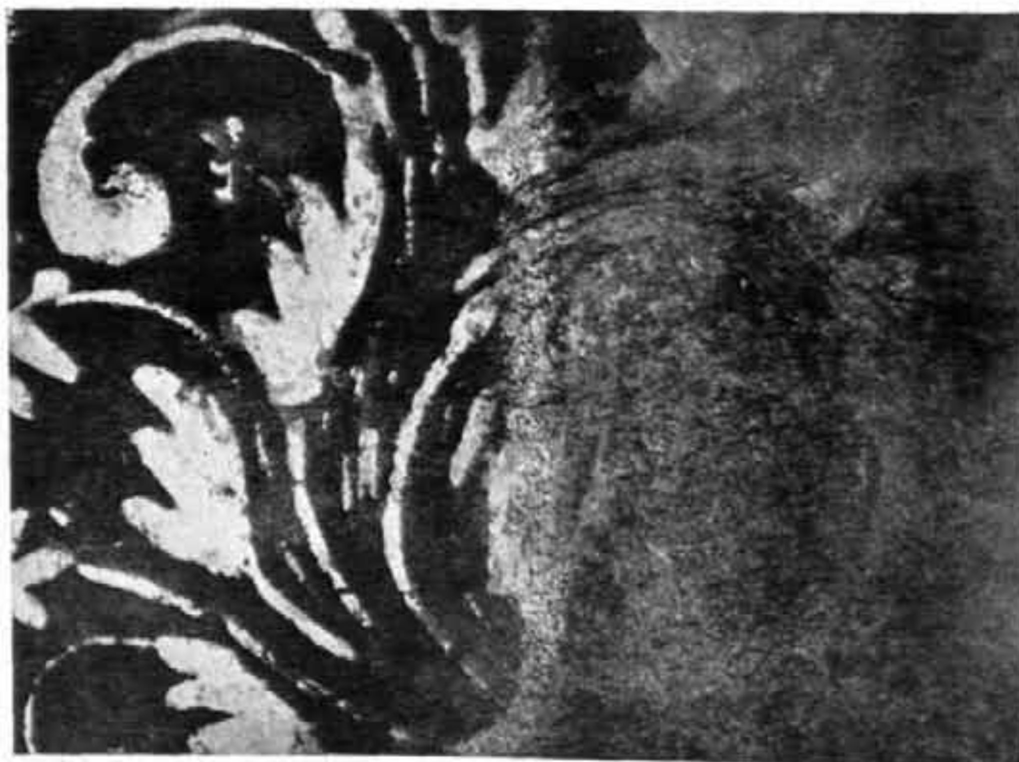
B

Chitor fort, interior of Rana Kumbha's palace : A, *before repairs, and* B, *after repairs.* *See page 43*

PLATE LX



A. *Chanda : a mural painting in Mahakali temple, showing chemical treatment (the upper left half represents the uncleaned portion).* *See page 49*



B. *Bagh caves : a mural painting, showing chemical treatment (the right half represents the uncleaned portion).* *See page 48*

PLATE LXI



A

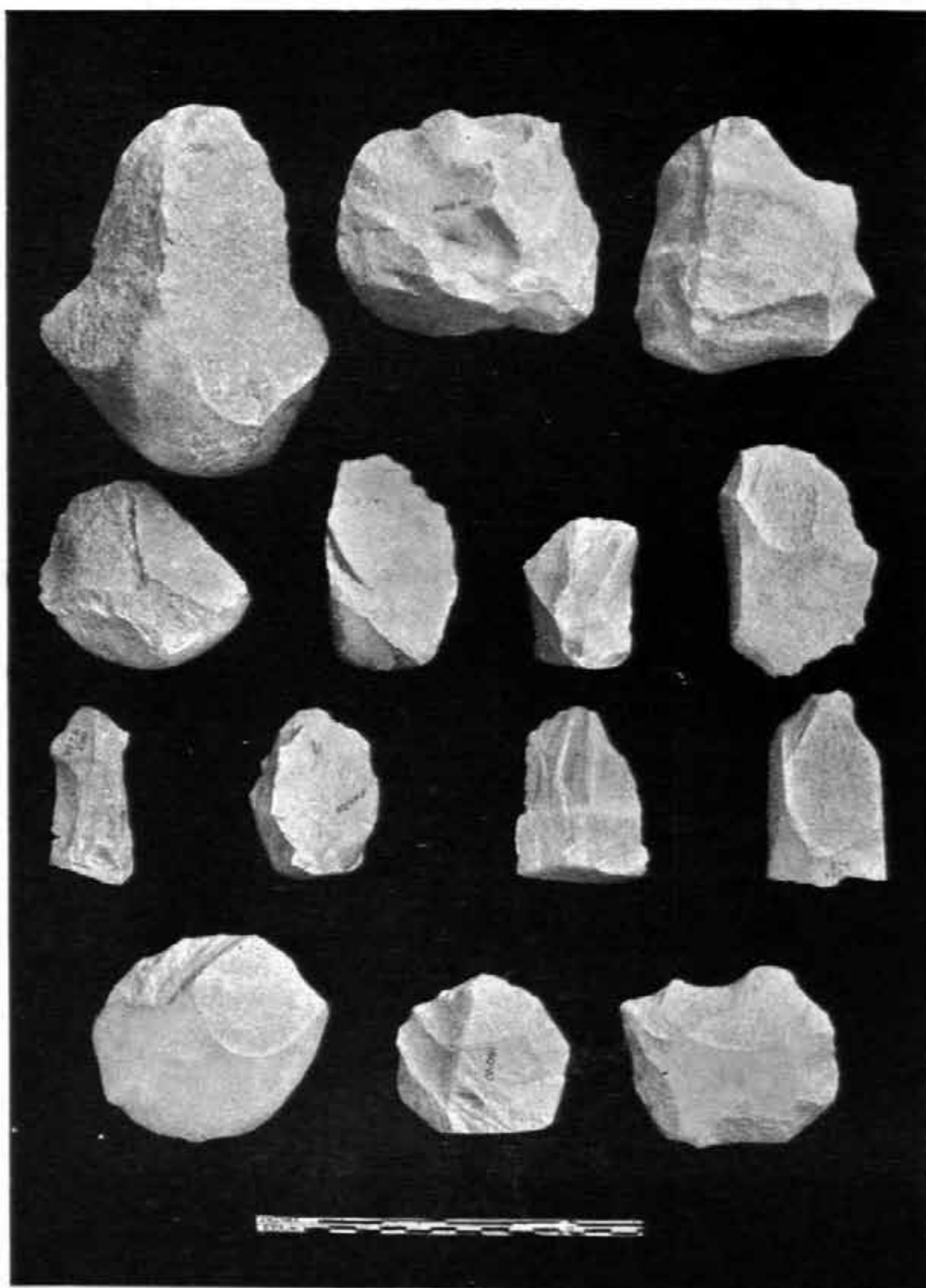


B

Baroda, a painted panel in Tambekarwada : A, *before chemical treatment and* B, *after chemical treatm*

See page 48

PLATE LXII



Palaeoliths: from the Sirsa and Sohan basins. *See page 58*